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The Liberator's Labyrinth

Stand-alone, Read-only Hypertext Fiction and the Nature of Authority in Literary & Hypertext Theory

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THE LIBERATOR'S LABYRINTH

Stand-alone, Read-only Hypertext Fiction and the Nature of Authority in Literary & Hypertext Theory

By

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1337382

A THESIS SUBMITTED IN PARTIAL FULFILLMENT

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Abstract

Theorists as diverse as Roland Barthes, Wolfgang Iser, and Stanley Fish have identified interpretation (the meaning derived from a fictional work by a reader) as distinct from the intentions of the author. This dissertation explores a common claim made in the first wave of hypertext fiction criticism: that the existence of authored choices created greater levels of interpretative freedom for the reader than in cinematic, theatrical, or traditional print works. Drawing primarily on literary theory, but selectively supported by computer and information science scholarship, this poststructuralist, antiauthorist position suggested that stand-alone, read-only hypertext systems could further the so-called “death of the author” when used for literary purposes.

Does the introduction of an additional authored layer (in the form of hypertext markup) really shift the balance of power between author and reader, and if so in what direction? Using concepts first articulated by Isaiah Berlin, this dissertation argues that the theoretical discussion has hitherto been based on a distancing, “negative” conception of liberty, while practice within early networked computer systems favoured the more coercive form, which Berlin termed “positive”. This disjunction highlights that an effective strategy for liberating knowledge in information science can have the inverse effect when applied to literary theory, despite sharing broadly compatible philosophical goals.

The following study will foreground the contradictions between these two concepts of liberty. Technology, not formal discourse represents the genesis of a new medium, but hasty theoretical consensus led to an essentialism, even a formalism within hypertext fiction scholarship which confined intellectual horizons, a distortion which resonates today in scholarship around literary hypertext fiction and other interactive media. The second wave of criticism questioned empowerment on an empirical basis, but did not fully undermine the first wave’s initial assumptions.

Having outlined the argument in the introductory chapters, the twin genealogies of hypertext fiction will be explored in greater detail: literary theories of authorship in Chapter 3, hypertext in Chapter 4. The fifth chapter draws these strands together, demonstrating that the project of literary hypertext fiction is in fact at odds with the versions of liberty found in its progenitor theories, before the sixth chapter looks at how this contradiction continues to haunt contemporary experiments with interactive narrative.

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GLOSSARY

Conventional Hypertext Fiction: A collective term for works produced according to a particular understanding of hypertext prevalent in the 1990s and exemplified by works produced on the *StorySpace* platform. p.15

Fabula: Originating in Russian formalism, but widely employed within the structuralist study of narrative, *Fabula* (roughly equivalent to *story*) pertains to the full range of potential narrative elements (characters, locations, situations) within the narrative world, and their subsequent inclusion or exclusion. p.45-6

Semiotics: The study of signs and how we derive meaning from them. Signs consist of a signifier (a representation of something) and the signified (the thing referred to) e.g. the word dog and the creature itself; mercury rising in a thermometer and an increase in body temperature; a hyperlink and the lexia to which it is connected.

Signified: See *semiotics.*

Signifier: See *semiotics.*

Sjuzhet: Originating in Russian formalism, but widely employed within the structuralist study of narrative, *Sjuzhet* (roughly equivalent to *discourse*) refers to the selective presentation of narrative elements and their relationship to one another. p.45-6

“Theory proposes, hypertext disposes” (Landow, 2006, p.127)

“Man proposes, but God disposes” (Kempis, 1881 [1418-1427], p.33)

Chapter 1 Introduction

This thesis will argue that approaches to freedom found respectively in 1960s Continental literary theory, and the Bay Area counterculture that influenced early digital computing, are incompatible, despite being the foundation for early criticism of literary hypertext fiction. This first wave of criticism argued for an extensive, "embarrassingly literal" correspondence between hypertext as a medium and Continental literary theory as an approach (Delany & Landow, 1991, p.10). As George Landow concludes, Roland Barthes and Michel Foucault "describe text, the world of letters, and the power and status relations they involve in terms shared by the field of computer hypertext" (2006, p.2), a medium some believe comes close to "realizing Roland Barthes' vision" of an ideal text (Moulthrop, 1991b, p.130).

Despite this first wave of criticism meeting what Assistant Professor Spencer Jordan calls an "inevitable riposte" (2014), the second wave consisted largely of reading studies (Kendall, 1999; Gee, 2001; Livingstone, 2004; Miall, 2000; 2004; 2006) and alternative semiotic models (Cantoni & Paolini, 2001; Mazzali-Lurati, 2007) that challenged first wave assumptions on empirical grounds. This focus on the *experience* of reading first-generation interactive narratives, on "narratological, stylistic and semiotic analysis" (Bell and Ensslin, 2011, p.311), did not directly question the correspondence between Continental literary and hypertext theory. Discussing the relationship between player and designer, Modir *et al.* (2014, p.5) assume that "hypertext challenges all these ideas that a work is strictly the sole property of the author" and echoes of the anti-authorist argument can still be heard even in critical works (see Miall, 2004; Jahshan, 2007; Bell and Ensslin, 2011), with scholar Wendy Morgan describing Landow's work as "definitive" (2002, p.221), despite her doubts about its validity or veracity. Literary scholar Marie-Laure Ryan comments that hypertext was "supposed to implement the ideas of Kristeva, Foucault, Deleuze, Eco and especially Barthes" (2016, p.336). Her subsequent criticism does not question the material framing of the argument, instead relying (again) on the phenomenology of reading. Separating the philosophical ambitions of Barthes from those of early hypertext theorists will help emphasise the distance between their understandings of freedom, and the consequent incompatibilities in their approaches.

1960s Continental literary theory emphasised a philosophical liberation from the author, with interpretation a demarcated and sacrosanct space outside the impositions of an author; contemporaneous computer and information science theorists, however, emphasised a

framework within which the reader could access knowledge according to their need. By positioning these approaches within Isaiah Berlin's negative and positive liberty respectively, this thesis systematically challenges those correspondences identified by scholars of the first wave, in a way that scholars of the second wave did not.

What is hypertext, and how did it come to be so closely associated with one particular branch of literary theory? At the ACM Conference of August 1965, sociologist Ted Nelson provided the first comprehensive definition: "a combination of natural language text with the computer's capacity for interactive branching, or dynamic display of a nonlinear text which cannot be printed conveniently on a conventional page" (see Sections 1.3.4 and 4.3 for more comprehensive discussion of this definition.)[1] More than just a compositional framework, Nelson drew on his background in sociology and the counterculture (see Rheingold, 2000; Chun, 2006; Castells, 2012; Fuchs, 2013; also Section 4.2.5.) to present hypertext as a powerful new philosophical framework for structuring and presenting knowledge. Ideas, he argued, evolve not in sequences but in "swirls". Linear writing systems demand these swirls be marshalled in a specific reading order; this opening chapter, for example, has been the subject of extensive redrafting. In the transition to a linear structure, however, alternative or unrealised connections between ideas are lost. In an inspirational work of advocacy published a decade later, Nelson concludes that such works present knowledge as a "pyramid of truth" (1974, p.157), in hierarchies he dismissed as "typically spurious". A considerate author might use footnotes or indices to suggest these lost connections, but these are both supplementary to the main body of the work, and unable to fully accommodate the many potential links that exist between individual passages; such unexplored potentials might well dwarf the scale of the final work. Consequently, the linear work requires the reader to move through the argument as the author has determined, rather than jumping between the multitude of ideas that inspired it.

In hypertext, however, the author ideally presents their thesis as a network of interconnected sections, permitting the reader to navigate according to their own needs and interests. The author's spurious hierarchies, which formerly imposed order on the multilinear associative structures of thought, are demolished. Hypertext offered a contrasting objectivity to traditional linear print, a "more flexible, more generalized" way to present material (Nelson,

[1] The word *hypertext* was first reported in the February 1965 edition of *Vassar Miscellany News*, which reported a lecture delivered by Nelson.

1965) that favours the individual and removes the false hierarchy imposed by an author's linear argumentation.

In Nelson's vision there need be no specific term for *reader* or *writer*; instead we are all users of a shared system, a democratic view of epistemology he does not restrict solely to academic work. "It is almost everywhere necessary to deal with deep structural changes in the arrangements of ideas and things," he told the ACM conference audience (1967, p.84-86). Hypertext was "intended to apply to all forms of writing", with particular utility for writers of fiction. Despite this, it was two decades before Michael Joyce published *afternoon,* the first serious attempt to create literary fiction using a hypertext system.[2]

The publication of *afternoon* and works like it arguably initiated the first wave of serious interactive narrative criticism, establishing a template for such works that proved hard to undermine. As writers of literary fiction began exploring hypertext in the late 1980s, critics and academics initially struggled to accommodate the fractured, fragmented works they generated. One solution (which would come to dominate contemporary academic discourse) was to find common cause between two previously exclusive strands of 1960s anti-authoritarian thought. Nelson and others provided the first; an ocean and several disciplinary corridors away, Roland Barthes and his Parisian contemporaries provided the second, in the form of literary antiauthorism.

In his 1967 essay *The Death of the Author* Barthes challenged the primacy of the author and critic, arguing that literary criticism unduly privileged the author's intended meaning over the reader's individual interpretation. This argument formed part of a wider shift in the analysis of the reading act, which increasingly focussed on the reader's response (Fish, 1980; 1990; Foucault, 1977; Iser, 1974; 1978; see Section 3.1) and saw the author as an intrusive presence in the court of readerly interpretation. Rather than comparing our interpretation against a supposedly canonical meaning provided by the author or critic, it was argued, the response of the individual reader should be the focus of intellectual enquiry. First wave critics of interactive fiction concluded that hypertext tipped the balance of power in the favour of the reader, moving us closer to Barthes' ideal text.

West Coast countercultural cyberutopianism and Continental literary theory: two then-fashionable 1960s intellectual schools, both exploring the relationship between medium and

[2] There is a competing claim in Judy Malloy's *Uncle Roger*, which appeared in 1986, and Alan Lane Anderson's 1981 *Elfland Chronicles*. In terms of influence, however, *afternoon* is by far the more significant work.

authority. The coincidence was irresistible. By drawing together these previously exclusive strands and their serendipitously similar lexicon, critics of the early 1990s were able to frame hypertext fiction as the proving ground for anti-authorist literary theory. This approach reaches its *acme* in prolific theorist George Landow's oft-reprinted 1992 work *Hypertext*. Concurring with Barthes *et al.* that print technology "engenders certain notions of authorial property, authorial uniqueness" (2006, p.33), Landow concluded that where "theory proposes … hypertext disposes" (p.127). Blinkered by the dominant technology of linear print, he argued, Continental theorists could not have foreseen that a technological breakthrough occurring a continent away would provide the solution to this newly urgent problem of authorial presence. Barthes ends his original essay with a perfunctory "the birth of the reader must be ransomed by the death of the Author" (1967*,* p.148), and it is here that hypertext is argued to take over, providing the framework for a literary fiction that diminishes authorial presence.[3]

This view was at the time widely and strongly held within the field. As hypertext fiction theorist Jane Yellowlees-Douglas put it, "when you read your first hypertext, your first reaction is that the Author has not only been killed outright, but that he or she has been quicklimed" (2003, p.18-19); writing of his own work Michael Joyce argued that hypertext fiction presents the work "in an order [readers] choose", choices which "change the nature of what you read" (1995, p.177). This fragmentation, argued academic Ernest Adams, placed the reader in a new role: "narrative [in a printed work] flows under the direction of the author, while interactivity depends on the player for motive power" (1999). This framework ostensibly dissolved the once-accepted hierarchies of linear writing, as readers experience the more flexible, generalized, non-linear presentation of material that hypertext affords, and emerges forever changed.

It was against this consensus that the second wave of criticism defined itself, combatting abstract theory with empiricism and "highlighting some serious issues around narrative coherence and reader satisfaction" (Pope, 2013, p.206). Alice Bell's 2010 work comes towards the latter part of hypertext fiction theory's second wave, which foregrounded the alienating and distancing effect of hypertext on the reader (Ryan, 2001; Larsen, 2003; Tosca and Walker, 2003) and called for yet more analysis of the phenomenology of reading hypertext. This sort of commentary dominated the second wave of criticism (Ensslin, 2007; Taylor and Pitman, 2007; Pressman, 2009; Bell & Ryan, forthcoming), seeking to establish both a critical canon and a

[3] …at least in matters of sequence. It is interesting that the identified means by which authors impose themselves on the reader is precisely that which hypertext can resolve.

standard methodology for evaluating literary hypertext fiction. Other critics (Millard *et al.* 2016, 2016a) have subsequently shifted their focus to the author, outlining strategies for the proper construction of hypertext fiction works.

A consequence of the second wave rejecting the anti-authorist account, however, has been a return to old habits (at least from a Foucauldian point of view; see Section 4.2). In a bracing introductory chapter, Alice Bell dismisses the first wave of hypertext fiction theory: "hypertext does not fully possess the capabilities associated with the poststructuralists' ideals" (2010, p.10). Dispensed with in a single page, however, the most vital element of this older critique is missed. The current baby swell of theory (a potential third wave?) refocuses attention on the author and critic, identifying strategies for more effectively producing (and comprehensively evaluating) literary hypertext fiction, or asking the same old rhetorical question: where is the populist hypertext fiction? (Pope, 2013; Mangen & van der Weel, 2017; Ryan, 2016: Ryan 2017;)

Defining hypertext (even negatively) in terms defined by 1990s hypertext literary theorists is akin to defining cinema by the films of Stan Brakhage, or poetry by the work of e.e. cummings. The highly individual version of hypertext (and more importantly, the theoretical framework which supported it) represented something entirely apart from the work of both hypertext theorists and the anti-authorist movement. Hypertext originally had its own philosophical approach to the structuring of knowledge and for the liberation of the reader, an approach far better represented even by other contemporary hypertext systems (see p.117). Key components such as collaboration, embodied intertextuality, and a linking structure that makes the destination of a hyperlink clear to the reader were elided in first-wave literary hypertext fiction, with favoured systems arguably skewed to favour the author (see Section 4.3). This ersatz and incomplete version of hypertext ultimately makes reading a quest for authorial meaning, contradicting the project of anti-authorist 1960s literary theorists (see Section 5.1.1.3).

In short, critical attention has challenged first wave hypertext fiction scholarship primarily on the phenomenology of reading, rather than unpicking the incomplete correspondences and assumptions this first wave of theoretical work relied upon. There remains an unwillingness to fully relinquish the idea of hypertext as generally transcendent of linear print's limitations, a first-wave virtue (and second-wave vice) embedded in its name. Reader empowerment remains a shibboleth for much literary hypertext fiction scholarship, with many chapters in Mark Bernstein and Diane Greco's 2009 book *Reading Hypertext* exploring the

author/reader relationship along these lines. Separated by a decade, both Pajares Tosca (2009, p.115) and Robert Kendall (1999) speak paradoxically of a "gratifying feeling of control" upon perceiving a relationship between the source and destination of a hyperlink, while the weighty power of choice granted to readers of hypertext fiction is still considered a factor in its resistance to being immersive (Mangen & van der Weel, 2017; Miall, 2012; Pope, 2013). Whether out of academic courtesy or cultural cringe, there is a resistance to directly tackling the framework that underpins Landow's original work, a task which this thesis will undertake.

Like the weight of criticism it explores, this thesis is focused on what might be called "conventional" hypertext (Bernstein 2001) a.k.a. the *link-node* approach (see Section 1.1): discrete lexia/reading units with links between them, in which the mechanism of navigation is revealed to the reader. This approach to hypertext was popularised by a collection of stand-alone works published in the 1980s and 1990s, in many cases using Eastgate Systems' *StorySpace* platform (see Chapter 2). This thesis will seek to highlight the disparity between this particular application of the hypertext concept and the two disciplinary areas it is said to embody.

By what title should we describe these collective works? In conventional hypertext, continues Mark Bernstein, "we create structure by adding lines, one after another, until we have added exactly the necessary degree of connection". Hence his term *calligraphic,* in the sense of drawing only those lines (or links) the author considers necessary. There are flaws in this term, however; coined as a counterpoint to the author's preferred form of sculptural hypertext (see Chapter 6), it proceeds from an assumption of "adding links to initially unlinked nodes" (Weal *et al.* 2002) that does not reflect the more chaotic compositional process of Nelson's swirls. Some scholars have suggested calling it the *StorySpace* canon (Ensslin, 2007), though this term is unduly historical and perhaps derives more from a desire to draw a line under an uncomfortable period in history. The canon of hypertext fiction is still dominated by these tent pole works and those that follow in its mould.

This thesis will therefore adopt the term *conventional hypertext fiction,* for both its acknowledgement of conventional hypertext and the pejorative association of what is generally done or believed. This term acknowledges the uniquely powerful influence that these earlier systems have over the field, and undermines its status as a maverick form of textuality.

Questioning the framing found in first wave scholarship need not rely on alternate readings or models, as was the case in the second wave of scholarship, but should be underminable on its original terms. Writing about his research into procedurally generated narrative, James Pope (2017) states his intention "to dismantle the prevailing history of this area" by reconsidering "where we came from and where we should go next". The same objective informs this thesis.

1.1 Why hypertext fiction?

Discussing the state of scholarship on hypertext fiction is a little like opening a time capsule; even the most forward-looking critics may find themselves citing arguments from three decades earlier. For most critics with a focus on technology, hypertext is a first generation interactive writing medium "of largely historical interest" (Hayles, 2007) and, in a field where two years can feel like a decade, the focus has shifted to more sophisticated forms of interactive media (Fitzpatrick, 2014). Why return to hypertext fiction at all, a medium that even in 1994 David Dobrin dismissed as "terribly exciting for a little while and then a bore" (p.315), let alone an approach as historicized as conventional hypertext fiction? As an art form, it certainly seems to have retreated yet further into the hinterland of visual culture and the avant-garde. It commands nothing like the cultural significance of video games, which offers the potential to study both interactivity and narrative in what is unarguably the more culturally influential package.

Game Studies arose under heavy scrutiny, however: its aesthetic qualities picked at by Cinema Studies; its narrative underpinnings by literature departments; its impact by psychologists. Outside the academe, games have also developed into a vast industry. The US Entertainment Software Association (admittedly not an entirely unbiased organisation) reported that in 2016, 60% of American households played video or computer games; what percentage of these could name the author of *afternoon,* not to say *any* work of hypertext fiction? The market for video games "dwarfs that of their physical counterparts," theorist and game designer Eric Zimmerman (2006, xii) pointed out over a decade ago. "Meanwhile the market for computer literature seems non-existent".[4]

Perhaps inevitably, then, the initial decades of Game Studies were almost defined by its struggle to define *itself* (Arjoranta, 2014; Klabbers, 2008; Sauve *et al.,* 2007), juggling competing and often-contradictory descriptors and social expectations in its theorising. Critical

[4] Computer literature is a phrase Zimmerman uses as a synonym for literary hypertext fiction, and does not refer to eReaders like Amazon's *Kindle.*

discourse for the study of games, argues Rogelio E. Cardona-Rivera and R. Michael Young (2014), routinely hinges on games as X, where X is “either a discipline or a framework from which we glean useful insights”, and the vibrancy of present Game Studies is arguably due in part to this profoundly interdisciplinary genesis. Literary hypertext fiction, by contrast, was permitted to develop largely unobserved by anybody but interested academics of a particular school, its output defined by what hypertext fiction and literary theorist Janet Murray called “modernist digital poetics” (1997, p.90; see also Bolter, 2001, p.143; Liestøl, 1994, p.89). You need only look at the language of late-nineties critics and authors (the dismissal of friendliness in a user interface as a “childish reflex” by Eastgate Systems founder Mark Bernstein [2000]; the optimistic and untestable belief of George Landow that “expert users will not worry about unfamiliarity and disorientation” [1997, p.117], to name but two) to see that even at its peak, few scholars saw hypertext fiction as compatible with popular fiction in general. In addition to eschewing commercial motivations, the medium also eschewed (for technical reasons or otherwise) potentially distracting elements of visual iconography; in most cases pre-existing typographical symbols were repurposed to indicate hyperlinks and navigational arrows.

Unlike the rich interdisciplinary history of Game Studies, then, hypertext fiction offers future researchers a convenient package of academic theory and creative practice, an elegant *argumentum ad antiquitatem* for easy reference that appeals to the academic fetish for the experimental, modernist, and obscure. As the academic currency of literary hypertext fiction depreciates from thesis subject to perfunctory initial paragraph to begrudging footnote, so too are we likely to see a concretising of the consensus around this first generation interactive medium. Professor of Creative Writing Spencer Jordan offers just two defining characteristics of hypertext fiction: “interactivity (the actions of the reader to some degree determine the story) and multi-linearity (there are differentiated ‘pathways’ through the story” (2014, p.326). Just as black and white cinema gained artistic cachet following the widespread commercial adoption of Technicolor, so some scholars may see these early narrative experiments as possessing a purity of which the more bombastic video game is incapable.

At least in part, academic efforts to align early hypertext fiction with literary theory also derived from a perceived lack of intellectual rigor within the digital humanities of the time (Gaggi, 1997; McGann, 2001; Landow, 2003). The emergence of literary hypertext fiction coincided with the high water mark of abstract literary theory, a time when such ideas were widely debated in academic circles. Adopting these respected theoretical frameworks arguably represented an act

of *legitimacy exchange*, the process by which "experts in one area draw on the authority of experts in another area" to justify their activities (Turner, 2006, p.25). In setting itself both as successor and counterpoint to the linear printed work, literary hypertext fiction was legitimised as the locus of academic enquiry. However unsustainable this view became, perhaps we can see it as a necessary part of the field's development. If first wave theorists had utopian dreams and visions, we should acknowledge (as Belinda Barnet does) that "visions can drive invention" (2013, p.251), helping to cocoon a nascent field under threat from a resistant academic establishment.

In what has been labelled a post-theory academic environment (Eagleton *et al*., 2003; Callus *et al.,* 2004) in which digital humanities has also carved out an independent niche, it seems fair to fully reassess the correspondences identified in those early stages of disciplinary genesis. Identifying digital media as precipitating a general crisis in our understanding of textuality, Espen Aarseth (1994, p.57) endorses such common ideas as the death of the book and our forthcoming liberation from "the tyranny of paper". With both paper and the book very much alive, we may ask whether that which did not kill the author made them stronger.

1.2 Methodology

Scholars of ideation (Wallas, 1926; Cornock, 1983; Barron, 1988) broadly concur with essayist and author Arthur Koestler (1964) in suggesting that new intellectual discoveries derive from the blending of unrelated elements into a new "matrix of thought". In the late 1960s the academic disciplines of information science and computer technology converged in hypertext, a new way to organise knowledge that borrowed principles from the anti-authoritarian atmosphere of the time (see Section 4.2.5) in the formation of their critical vocabulary. Two decades later, a handful of writers began to seriously experiment with this new medium, resulting in academics seeking in turn to blend hypertext's vernacular with the prevailing currents of literary theory (see Section 2.3).

The parallel influences that defined literary hypertext fiction also shape this thesis. The understanding of 'freedom from authority' offered by the distinct academic traditions of literary theory and hypertext respectively will be evaluated in their historical context, before examining how incompatibilities in their approaches undermine the arguments of first-wave hypertext fiction scholarship.

1.2.1 Chapter 2: The Convergence Argument

Using the work of George Landow as a spine, but illustrated with material from a diverse range of his contemporaries, this chapter reflects on the central claim made for literary hypertext fiction by scholars of the first wave – that it represented the praxis of anti-authoritarian traditions in poststructuralist literary and hypertext theories. The chapter begins with an outline of Roland Barthes' *Death of the Author*, specifically identifying the qualities of what he called the "ideal text" (1974, p.6), after which an equivalent ideal form of textuality is sough from early hypertext theory. The final section looks at how scholars of conventional hypertext fiction attempted to reconcile the limited affordances of what Landow called stand-alone, read-only hypertext systems in a manner that promotes interpretative freedom for the reader.

1.2.2 Chapter 3: Literature, Authority, Freedom

This chapter outlines the historic relationship between literature, authority, and authorship against which literary hypertext theory has defined itself. It asks the question that so exercised continental literary theory: to whom does meaning ultimately belong?

From this chapter emerges an understanding of literary anti-authorism as historically focussed on absence, not presence. This theoretical approach saw authors and critics as intrusive juridical presences, whose incursions into the interpretative space of the reader undermined the intertextual connections the reader might otherwise have made themselves. This section foregrounds the implicit advantages of a linear print work for this approach, which sees intertextuality as a metaphor for the connections readers make both within and without the work.

Stewardship of meaning has been argued to rest with a range of agents: god or nature in the ancient and medieval periods; the individual author during the Enlightenment; the reader's interpretation, for Barthes and Foucault; split in some respect between authorial intention and reader's interpretation, for Wolfgang Iser and Stanley Fish. Above all, this section seeks to underscore the objective – not the praxis – of anti-authorism. Anti-authorism is an attempt to undermine the significance of the author and critic, positioning the work as a product of its wider cultural context. Between the work and reader is a virtual space in which interpretation takes place, a sacrosanct space that is the readers' alone and from which authors might properly be excluded.

The second section foregrounds examples of proto-hypertextual literature, works that theorists and critics have identified as exhibiting nascent hypertextual principles. Each work is

considered in the context of my emerging argument, demonstrating that these works often privilege the author in the manner criticised in the preceding section and emphasising biographical context as means of understanding the work. This approach in turn emboldens the critic, who is traditionally considered to be reliant on the privileging of the author for their own claim to literary authority.

1.2.3 Chapter 4: Hypertext, Authority, Freedom

This chapter foregrounds affordances of hypertext that are incompatible with the superficially similar intellectual aspirations of literary theory, as found in Chapter 3. Firstly, the ideal of standardization and universality stands against the privileged literary principles of interpretation and individuality; secondly, the presentation of hypertext fiction as a static work connected only to itself offers an inert version of the hypertext project; thirdly, the logic of hypertext is disposed towards the creation of a collaborative system, while conventional hypertext fiction chose to recentre around the mechanics of the work itself. Regulating the meaning of hyperlinks (and privileging authorial intention) is not at odds with the hypertext project as an approach to epistemology, in which context it may still have a claim to democratic liberation of the user. It runs counter, however, to the ambitions of literary theory identified in Chapter 3.

In short, this chapter seeks to identify the connection between hypertext and liberty. It is divided into three parts.

Part One highlights that exegesis should take into account the distinctive features of the medium in which a work is authored, which was undermined by the historical anonymity of software designers (or ignorance of the power they have over software design). Roland Barthes believed that technology, not those who make use of it, define the parameters of a medium. This belief makes Lev Manovich's observation regarding the 'secret history' of software development the more troubling, since the grammar of content is defined by its medium. Foucault's 'founders of discursivity' argument is contested on this basis, arguing that his assumption regarding founders also being practitioners does not track to new media technologies, in which the application of software often falls outside the control of the designer.

The second part of this chapter provides an overview of hypertext's origins in information science and the American counterculture, before outlining how these influences produced a positivist medium defined by connectivity and the rationalising of diversity. At each stage this section foregrounds the tension between the rationalist rhetoric of standardisation, and the diversity of information hypertext is required to accommodate, emphasizing the tension

between subjectivity and objectivity. These ideas inform the subsequent discussion of early hypertext systems, in which the objectives of both Douglas Engelbart and Theodor Nelson are explored, establishing more clearly the intellectual and political attitudes of these pioneers of hypertext.

The personal computer has been positioned by some as a passive agent allowing the user to free themselves from the restrictions placed upon them by non-networked systems, by others as transferring significant power to the designer of those systems. This tension necessitates a discussion of the nuanced negotiated relationship between user and designer. This rationalist approach to knowledge management has a significant influence on how we access information, as this third section explores. By way of illustration, Trigg and Weiser's *Textnet* will be explored in some detail, emphasising how it explicitly favours authorial meaning. Having identified this historical context, this section concludes that hypertext is patterned after two core propositions: firstly, that knowledge should be connected and interrelated in a meaningful way; secondly, that this connectivity requires the rationalization of nuanced or ambiguous data to suit the system into which it is being placed.

Metaphorical intertextuality is undermined by its concretisation into a network of literal connections. Poststructuralist literary theory privileges the network metaphor, the elision of textual boundaries, and in particular emphasises ambiguities not resolvable within the text. Hypertext, by contrast, seeks to *resolve* ambiguity through the work via interconnectivity, the establishment of coherence through hyperlinks, and the amalgamation of the author/reader role. Where authors of literary hypertext fiction have instead sought to use hyperlinks to create ambiguity, their efforts are undermined by the medium in which they are writing.

This chapter concludes by placing these conclusions in a wider context, considering the rationalising and anti-diversity potential of language in general and suggesting that constructed languages in particular are designed to reduce diversity in favour of utility, before looking at how this logic persists in the work of 1990s Silicon Valley and beyond.

1.2.4 Chapter 5: Hypertext Fiction, Authority, Freedom

This chapter focuses on conventional hypertext fiction: what it was and how it fits into wider debates around both the freedom and autonomy promised by the personal computer, and parallel academic notions of authorship. It seeks to explore the historically problematic integration of hypertext as a form with literary fiction as content. First-wave commentators such as George Landow, Paul Delaney, Jay Bolter, and Jane Yellowlees Douglas equated the

freedom and choice permitted by a particular historical form of hypertext with a particular strand of poststructuralist literary theory, which appeared to undermine certainties in the contract between author and reader.

How far does a conventional hypertext author relinquish personal control of their creative endeavors, and how far can the reader be said to have an active role in the process of creation- or even to have usurped part of the author's accepted role? These first-wave literary hypertext fiction theorists suggested the medium provided a fractured reading experience that further allowed the reader to explore their own interpretations, a view still found in some scholarship today. In reality, this structure is heavily weighted toward the author, returning the power of meaning back to the text and author, and away from the reader. This chapter is divided into four sections that outline this argument in more detail.

The first section explores information asymmetry, in doing so outlining a key anti-authorist argument as found in hypertext fiction scholarship: that by substituting a branching network for the continuity found in the linear print work, the reader is better able to evade the author's control (at the cost of a more confusing narrative structure).

The second section offers two interrelated counterarguments: firstly, that the presence of unread lexia permits the author to intrude into the interpretative space of the reader, by denying that the work itself is finite; secondly, that the opaque hyperlinks favoured by literary theorists encourages this strategy. This failing derives from the incompatible approaches to liberty found in each field. A supposedly infinite and dilating work whose structure is designed to bewilder makes intertextuality and indeterminacy an authorial tool, rather than a rhetorical strategy or philosophical approach to readership. This distinction renders a unique tool of hypertext fiction one of authorial intrusion, rather than reader empowerment. These two mechanisms in conjunction encourage reading as a quest for authorial meaning, a framing at odds with the work of Foucault and Barthes (not to mention other key literary theorists). A possible solution is identified (ironically) in the much-derided blatant hyperlink, whose destination and origin are explicit.

The third section explores the quest for meaning from a different perspective. Conventional hypertext fiction's approach to indeterminacy encourages the reader to return to the text (and by extension the author) for validation of their interpretation, a view of reading hypertext that is widely supported. Exploring the forms of closure this offers, in doing so collapsing them into completionism or abandonment, this section argues that the presence of

unseen lexia is an intrusion into the interpretative space of the reader. The difference between opportunities for choices and meaningful choices themselves is used as a wedge to support this argument.

The fourth section looks at the kind of choices offered by conventional hypertext fiction. It will first argue that hyperlinks in themselves are not meaningful, before discussing the failure of modernist hyperlinks to offer intelligible decisions for the reader. Conventional hypertext fiction offers a form of choice we might call *theological*, a test which the reader may pass or fail. The morality of this choice framework is challenged in the closing paragraphs.

1.2.5 Chapter 6: The Convergence Argument Today

Conventional hypertext fiction epitomizes a tension between the formal and aesthetic that can be found in all interactive fictions. Where Chapter 5 was largely historical, locating the argument within its original context, this chapter seeks to foreground contemporary works and platforms that seem to echo this problematic model. The chapter itself is divided into four sections.

The first section looks at *Twine,* a platform that rekindled interest in hypertext fiction outside the academic community. Both its authors and designers have generally returned to the same author-privileging paradigm identified in earlier hypertext fiction works, in the former case using the platform to draw readers into the mindset of the author. While Barthes believed all works could be read in the context of the "death of the author", this approach implicitly encourages readers to seek the author's intention rather than trust in their own emerging interpretation.

The second section moves to Mateas and Stern's *Façade,* an intermediary 2005 work that sought to resolve issues of authorial control by offering readers the option to author their own questions. In doing so, they remediated (but did not resolve) the problems identified in Chapter 5. The gap between the promise of *Façade* and the experience of play is demonstrated through a return to John Langshaw Austin's work, specifically the contested illocution that this section ties back to Wolfgang Iser, the opaque hyperlink, and choice as a test (see Section 1.3.3).

The third section evaluates Sam Barlow's 2015 *Her Story*, which removes some of the features earlier theorists felt held back conventional hypertext fiction. The presence of a search feature does not help, however, with the gating of information here deployed as an author-privileging feature of the mystery genre.

The final section discusses simulation, in this context the modelling of a real-life or contrived situation on a computer, which may at first appear rather different to the first generation interactive medium discussed to this point. However, simulation's transparent rules for interaction and acknowledgement of an authorial presence (both features found in the hypertext theory, see Chapter 3) work together to afford the reader an interpretative space uncontaminated by authorial ambiguities, offering a potential way forward for hypertext fiction in general.

1.3 Terms of Reference

The lack of precision and discipline in hypertext fiction terminology is a persistent issue (Aarseth, 2004; Murray, 1995; Montfort, 2004), and competing definitions of narrative and interactivity (central to the so-called narratology/ludology debate) represented the field's defining crisis in the early 2000s (Murray, 1998; Zimmerman, 2006a). Perhaps more so than in other academic fields, research produced within the digital humanities requires a common vocabulary to be established, since so much work ranges across diverse and seemingly incompatible disciplines (in this case 1960s computer science and continental literary theory). The problematic integration of these competing fields is compounded by a reliance on common terminology – freedom, choice, authority – which have very different contextual meanings in each discipline. When 1960s computer scientist Douglas Engelbart talks about 'authority', does he mean the same thing as 1990s literary theorist Janet Murray? Does sociologist Ted Nelson define 'liberty' in the same way as literary theorist George Landow? By the same token, is it really possible to use general theories of language to consider programming languages, or arguments about political power to critique principles of authorship? To that end, the remainder of Chapter 1 is given over to the identification of what linguist J. L. Austin calls "nuclear meanings" (1979, p.71), encompassing definitions of commonly used terms. Outlining these terms early will allow later chapters to demonstrate how hypertext and literary theory gravitated toward different poles within the same nuclear meaning.

Given their prevalence in relevant scholarship, nuclear definitions are here sought for the following key terms: freedom, authority, choice, hypertext, hypertext fiction, and finally language, since the latter offers a multi-disciplinary way to draw the different subjects into this thesis. Where there is a political dimension (as in the choice of "reader" to describe the individual navigating a hypertext fiction work) this will also be addressed.

1.3.1 Contact Languages

In his deceptively dry-sounding *Image & Logic: A Material Culture of Microphysics,* Professor Peter Gallison explores the problem of scientists from different disciplines collaborating in a lab environment. Despite his advocacy of interdisciplinary research, Gallison is an anti-reductionist believer in the "disunification of science" (1997, p. 137), arguing that specialism ensures strength and stability in scientific enquiry. *Nanotube*, for example, has different meanings for surface chemists, electrical engineers, or atomic physicists respectively, and to simplify the definition for each would be disadvantageous to the whole. Gallison's ideal model for collaboration instead uses the metaphor of the *trading zone*, borrowed from the eponymous place of mercantile exchange for Columbian peasants and landowners. In these zones an object can be successfully traded, despite holding entirely different value to the two parties.[5] Similarly, physicists and chemists may discuss ideas despite their respective communities holding different meaning for shared terms. These negotiated "contact languages" (Gallison, 1997, p. 783) vary in sophistication, but generally afford collaboration without compromising disciplinary integrity.

This anti-reductionist approach encourages interdisciplinary research that does not create false cognates, problematic hybrid definitions of similar but exclusive ideas. Adapting Galison's insights from the scientific laboratory to the digital humanities, I can see efforts to adopt a similar approach. Asked to evaluate a particular period in film history, for example, a data analyst may proceed from a particular dataset, while a student of visual culture might begin with the original artifacts. It is not necessary for one approach to supersede the other; only to have a 'creole' for discussing their subsequent findings.

At best, contact languages can help smooth the way for interdisciplinary research, but care must be taken not to consolidate superficially similar concepts. The sub-disciplines of a field, argue classicists Gregory Crane and Elli Mylonas (1995, p.210), are like "the provinces of a nation", each having its own traditions and dialects but sharing "certain basic values and interests". Where two *fields* meet, however, these shared values may not be so commensurate, if they are shared at all.

Key terms that intersect with (but do not belong to) an area of study often have general definitions that are quite distinct when viewed through the lens of a particular discipline. It is for

[5] Another example might be the sale of a family heirloom to an avid collector: trade may take place despite neither party sharing the emotional investment or fetishistic acquisitiveness of their counterpart.

this reason that students are enjoined not to use general-purpose dictionaries, since general use of the word *text* (for example) differs from its technical application in literary theory. Writing in the 1970s, philosopher of language J. L. Austin discusses the related problem of assigning meaning to words, focussing briefly on the question of homonyms:

> When we speak of "healthy exercise," the word "healthy" has a connotation which is only partly the same as that which it has in the phrase "a healthy body"… healthiness[a] and healthiness[b] have connotations which are partly identical and partly different. (Austin, 1979, p.71)

In the sentence "I love pasta" it is possible to paradigmatically substitute the noun *pasta* for the noun-phrase *my wife*; this does not mean the subject feels equally about both. *Love*, therefore, is an umbrella term that accommodates numerous concepts that are themselves quite distinct. Austin calls this the "primary nuclear meaning", while Philosopher G.E.L. Owen (1960, pp.167) echoes Aristotle in calling it the "focal meaning", and it is a starting point for understanding the challenges of using shared terminology to describe different experiential phenomena.

Austin acknowledges that finding the primary nuclear meaning is perhaps easier in theory than practice, but a common point of departure will assist in contrasting the different approaches to these key concepts taken by theorists of hypertext or literature. In this spirit, the following section seeks to identify adequate nuclear meanings for key principles that subsequent theorists have approached from their respective disciplines. I cannot argue that these definitions are without fault or nuance, but an encompassing survey of philosophical approaches to 'free will', for example, falls outside the scope of this thesis. Comparing the study of game-story to "the more robust fields which cluster about the theory and practice of other media", Zimmerman (2004, p.154) suggested that imprecision around "concepts and terms" seems to be the central issue for the serious study of interactive narrative. The objective here is rather different to Zimmerman's principle of thrift in the proliferation of meaning, to paraphrase Foucault. These terms are established in order to explore, over the coming chapters, how the same concepts evolved from their nuclear meanings in different and often contradictory ways within different fields.

The theorists identified have in most cases no direct connection to hypertext fiction theory or video game scholarship, offering instead encompassing definitions of each term which we can interrogate in the following chapters, based in most cases on extensive study within their own disciplines. They have not been identified for their political or ideological affiliation (though this sees interrogation where relevant) but for their attempts to encompass the breadth

of existing scholarship. As with any reductive approach to language or definition, certain nuances may remain unexplored, but it is hoped that the definitions provided are adequate for the purposes of this interdisciplinary study.

1.3.2 Freedom and Authority

Published in 1958, philosopher Mortimer Adler's *The Idea of Freedom* provides a helpful synthesis of various historical definitions of freedom and liberty - terms that he, like this essay, later concluded were synonymous (1996). In a 1959 review by David O'Connell, Adler's book is described as synthesizing the "library of freedom" so completely that it is simply called "the literature" in its opening pages. Written over the course of a decade and in conjunction with his *Institute for Philosophical Research* (and twenty other researchers), Adler's exhaustive work (1958, p.127-149) distils hundreds of authors and their research into three so-called "modalities of freedom": *natural*, *circumstantial*, and *acquired*.

The following section aligns these three modalities with the work of philosophers Isaiah Berlin and Charles Taylor, whose widely regarded approach to freedom will prove useful in identifying the quality of liberty permitted by hypertext and poststructuralist literary theory. The intention is to demonstrate that both external and internal factors impinge on our capacity to make meaningful choices, in some cases negating the existence of choice at all, despite the presence of options. Philosopher Slavoj Zizek (1989, p.185-6) offers the illustrative example of a Yugoslav soldier refusing to sign a document affirming his willingness to serve. Stating his readiness to sign if ordered, he was informed that the document had to be signed of his own free will – but it needed to be signed. It is possible for options to exist, this example shows, without *meaningful* choice being possible.

The first condition for freedom to exist is the capacity for choice at all. Adler refers to this as *natural freedom* (1958, p.135), which is "possessed by all men… whereby a man is able to change his own character creatively by deciding for himself what he shall do or shall become" (p.225). Natural freedom exists outside any internal or external forces, and refers only to our capacity to make a choice. It may seem perverse to dispense with this category so lightly, but its intrinsic and binary character (it either exists or it doesn't) makes it a necessary but not particularly layered component.

Adler's second condition asks what limitations exist to shape or curtail our decisions, what he calls *circumstantial freedom*. This is defined as "freedom from coercion or restraint" and encompasses such favoured principles as civil liberty, and such authoritarian ones as undue

legal restraint or political coercion (p.127). As these examples suggest, we might argue that circumstantial freedom refers to two qualities: the rules that define the space in which we are free, and the rules that bind the actions we are permitted to undertake. This two-part framing of circumstantial freedom can also be explored with reference to the work of philosopher Isaiah Berlin, whose approach will prove central to this thesis. If the inclusion of Berlin in this section appears intellectually perverse, given that his politics stand in stark contrast with most figures discussed here, it should at least protect against the suggestion that these definitions of freedom lean towards the left. Berlin's view, it should be noted, is widely recognised and respected across the political spectrum (Arneson, 1985; Cohen, 1988; Hayek, 1982), with his binary being described by Charles Taylor as "undeniable" (1985, p.211) and Ronald Dworkin as "the most important modern essay on liberty" (1977, p.267).

Like Adler, Berlin (a keen student of the philosophy of language) believed that the word liberty encompassed a multitude of potential meanings. His focus, however, was on circumstances, and in the same year that Adler published his encyclopaedic work Berlin delivered a lecture that offered two diametrically opposed visions of circumstantial freedom, a lecture later published as *Two Concepts of Liberty*.

In *Two Concepts of Liberty*, Berlin seeks to distinguish between 'freedom from' and 'freedom to,' which he defines as negative and positive liberty respectively (1969, p.121). He starts by establishing that if natural freedom is the capacity to act, circumstantial freedom is the liberty to do so. This is the same principle that Adler describes; Berlin, however, extends this critique significantly. Negative liberty, he continues, asks in which areas a person or group of persons might be free to do or be what they choose without interference by others, while positive liberty asks what control or interference exists to coerce somebody to behave in a certain way. Negative liberty is being free to walk along the pavement, for example, while positive liberty means being arrested for driving on it. It should be noted that this binary parallels Adler's own definitions of coercion and restraint. Perhaps influenced by a traumatic childhood spent under Bolshevik rule and a consequent opposition to Communism, Berlin later argued that positive liberty is the approach most often abused for totalitarian or oppressive purposes, since it offers the greatest potential to enforce specific modes of behaviour. Negative liberty marks out a space in which one is free, while positive liberty provides the conditions under which that freedom operates. These conditions need not be brutish or violent, since they require

only that we submit to these rules. To clarify how such systems might operate requires a detour into the difference between authority and power.

Literary theorist Bo Eklund suggests “literary authority, like any other form of authority, exists only when it is recognized” (2008, p.89). By way of example: Professor Edgar Johnson, a biographer of Charles Dickens, pronounces his subject’s approach to characterisation as generally “flat” (1952, p.2). If a student contested Johnson’s reading, but conceded under threat of violence from the Professor, that would be an (admittedly unlikely) exercise of power - not authority – since the student is silent out of fear, not conviction. Johnson’s status as an expert, however, might result in the student doubting their own interpretation and requiring no such threat. Both authority and authorship share a root in the latin *Augere*, meaning "to increase, augment, strengthen that which is already in existence," and also "to exalt, embellish, enrich” (Donovan *et al.*, 2008). It is an exercise in reinforcement and encouragement, usually from a respected figure.

This way of understanding the difference between authority and power is well established (see Foucault, 1974; Hobbes, 1988; Locke, 1689; Mills, 1958, p.77; Sabine, 1936, p.38; Weber, 2015, p.136) but for clarity we may turn to mid-twentieth century sociologist C. Wright Mills, who suggests that power takes three forms: *coercion*, which he considers to be “physical force” and rare in a civilised society; *authority*, which is “power associated with a position” and relies on the permission (to an extent) of the governed; and *manipulation*, power “wielded without the conscious knowledge of the powerless” (Mills, 1958, p.41) which a Marxist might call *false consciousness*. Imagine again the student who sees greater nuance in Dickens’ characterisation. A fellow student restraining her hand is an act of *coercion* (or perhaps concession). If she raises her hand and cites Professor Natalie McKnight’s more forgiving (if obscurer) perspective on Dickens (2008, p.186), that is an appeal to authority. If cultural representation of Dickens led her to believe that no criticism of the author were possible, her reluctance would be a consequence of social consensus.

It should be clear that only the second example offers a negotiable position for the powerless, since our student must consciously elect to appeal to authority. Coercion allows the powerful to actively suppress dissent, removing the agency of the subject. Social consensus is often invisible and systemic, frequently resulting in the reproduction of such ideas without conscious thought. In an earlier work entitled *White Collar: The American Middle Classes,* Mills argued coercion rarely worked in the long term, since it is both inefficient and prone to “rejection

by the powerless" (1951, p.110). The truly efficient form of manipulation is bureaucratic, a social structure which privileges a "power elite" and encourages us to "embrace and internalize" the system (*ibid.*, 1956, p.6). As these systems and structures become universal, they become invisible; we "internalize directives" without recognizing that we are being manipulated (*ibid.*, 1951, p.110). French sociologist Michel Foucault articulates much the same concern two decades later:

> It seems to me that the real political task in a society such as ours is to criticize the working of institutions which appear to be both neutral and independent; to criticise them in such a manner that the political violence which has always exercised itself obscurely through them will be unmasked, so that one can fight them. (1974, p.171)

The difference between coercion and authority, then, is that the former forces the subject to act, while authority encourages subjects to voluntarily subordinate themselves. If an educator maintains control through threats of punishment, that is coercion; if they create an environment in which insubordination is unthinkable, that is a manifestation of authority. Despite coming from very different political backgrounds (Marxist, critical modernist, liberal), Mills, Foucault, and Berlin share a pessimistic view of bureaucratic systems regulating discourse. Each is concerned in various ways with the manner in which authority encourages the subordinated to feel that the regulation of their behaviour is in some way necessary, if not necessarily virtuous. This concern arises from the movement of control from the outside (as per Adler's discussion of "circumstantial freedom") to the subject themselves, which Adler calls "acquired freedom".

The third and final of Adler's categories, *acquired freedom* is defined by our capacity to act "as we ought to" (1958, p.135), and suggests that we are only free when acting according to morality (here used to described a personal intellectual framework) rather than satisfying our desires. As the name suggests, this mode of freedom is socially acquired. Consider a table laden with food, and a group of hungry participants. Subject A gorges himself, while Subject B distributes food first amongst those in greater need. No circumstantial restraint exists, but Subject B has "chosen to act" according to rules he has learnt over time. This altruism may be innate, of course, but would still constitute internalised moral directives over which the subject has no meaningful control.

A similar concern is expressed in Canadian philosopher Charles Taylor's exploration of Berlin's notions of liberty. Despite completing his PhD under Berlin, Taylor belonged to the school of Canadian Idealism that sought to reconcile individual liberty with the needs and values of the community. This mission became the subject of his 1985 essay *What's wrong with*

negative liberty? More sympathetic to the role of the community in the establishment of personal identity, and therefore behavioural norms, Taylor proceeded from the position that Berlin's two polarities of freedom are "undeniable" (1985, p.211). These two positions, he continues, define freedom either as the "independence of the individual from governments, corporations or private persons" in the case of negative liberty, or "collective control over the common life" in the case of the positive (p.211-13).

It is here that Taylor begins to move away from Berlin's liberalism. Taylor seeks to explore these poles by associating them either with "opportunity-concepts" or "use-concepts". Negative liberty asks only whether we are being actively prevented from acting, suggesting that, in the absence of any tangible restrictions, our natural freedom is unrestricted. This ignores any internalised rules that may still shape our behaviour, however. Negative liberty is, therefore, an opportunity-concept, since it is only necessary that there are "no obstacles in one's way" (Taylor*,* 1985*,* p.214), in the sense of physical barriers. Positive liberty, on the other hand, is a use-concept, since it requires an understanding of the extent to which our behaviour has been restricted or curtailed (p.213). "If we are free in the exercise of certain capacities," Taylor argues, "then we are not free, or less free, when these capacities are in some way unfulfilled or blocked" (p.215). Framing this idea more fully, Taylor offers three traits that can thwart "self-realization or self-fulfilment" (p.216): *inner fear*, such as a fear of failure*; inauthentically internalized standards,* in which the subject believes people like themselves are incapable of certain goals; and *false consciousness*, which speaks to the wider social pressures that may encourage a subject to act against their interests. While Taylor does not define self-fulfilment in the essay, the context suggests that he is articulating a general sense of achieving a desired goal. Taylor describes personal ambitions as just that: personal, an individualised path to enlightenment that the subject must determine for themselves. He later concludes that personal feelings (inner fears or false consciousness) act as a barrier to freedom, since they are "import-attributing" and may cause us to make objectively poor decisions in preference to our subjective bias (p.227).

Rules, restrictions, and limitations that we have absorbed (consciously or otherwise) are capable of curtailing or shaping our choices, regardless of whether we are consciously aware of these barriers. Systems put in place with the intention of enhancing our experience of liberty may in fact restrict freedom, thus it is in the use of freedom – not the theoretical opportunity for it – that we discover whether we are truly free. Indeed, Adler's own definition of acquired freedom

as “behaving as we ought to” carries threateningly paternalistic overtones, despite the prohibition on our behaviour coming from an internalised moral system.

Freedom and choice seem bound together in complicated ways. Having perhaps accepted the possibility of freedom as sufficient in itself, we now see that both external and internalised factors shape and curtail that freedom. Philosopher Richard Holton characterizes freedom as “consisting in one’s ability to get one’s actions into line with one’s beliefs about what is best” (2006, p.5), underscoring that it is the exercise of liberty – the act of choice – which demonstrates the extent to which we are free. It is to this task that we must now turn, asking how we should understand the choice component of this complex framework.

Defining choice (the raw materials of our natural freedom) would appear to be simple. In his article *The Act of Choice*, however, Holton argues that choice is an “under-explored phenomenon” (2006, p.2) that is too often ignored in favour of the broader notion of free will. It is a process, not a simple binary state like natural freedom, and the word *choice* can describe very different experiential phenomena. The following section will seek to qualify choice as an act of multiple stages, and a vital component for any discussion of free will and authority.

1.3.3 Choice

A central concern for Holton is the conflation of *agency* (the ability to make a selection, which I equate with Adler’s natural freedom) and the phenomenon of *choice* (the cognitive act of making a selection). The distinction is not so thin as it may appear. Qualifying the difference, Holton has us imagine an anarchic hand (one over which the owner has lost control, and therefore the experience of agency). Now consider the other, functioning hand, over which the owner has full control. This hand simply “does its job—buttoning the shirts, taking the right food, restraining the anarchic hand—with no choice being made” (Holton, 2006, p.2). Holton’s position is that there are many such situations, in which one has agency but cannot be said to be making choices. Walking home, for example, offers agency without choice, since despite being able to take a less efficient route we are unlikely to do so without some external consideration (such as a road traffic accident, which is equally beyond our control). These automatic actions are “nonetheless free” (p.4) since nothing actually impedes our ability to act; “agency consists in, or at least, requires, the capacity to choose” (p.13). Agency without choice instead consists in “the *unexercised capacity* to choose.” To accommodate this difference, Holton offers a two-level system:

> One level is that of automatic heuristic-based responses. These are fast, cognitively economical, typically very limited in scope. We pick up on a certain cue and respond to it. The second level involves conscious consideration and choice: it is slow, demanding, but more flexible. (Holton, 2006, p.3)

I have agency (or first-level choice) when I am taking a customary route home; second-level choice only exists "when *the question of what to do arises"* (Holton, 2006, p.2), as when walking to a destination for the first time. Neither mode is predicated on intelligence or capability: medical professionals routinely make first-level decisions, since the correct course of action is unambiguous. Such experienced actors "just know what to do" (p.3) based on prior knowledge; this does not mean they are making second-level choices. Interestingly, second-level choice seems distinct from Adler's acquired freedom, since "experience tells us that our choice is not determined by our beliefs and desires, or by any other psychological states – intentions, emotions etc. – to which we have access" (p.15). Second order choice is not, in other words, contingent on our upbringing, or any other internal moral or psychological factors. This ability to act against our 'nature' makes second-level choice an action, since we can act against an implicit 'learned' sense of what is the right thing to do.

Having established that true choice is the active selection of a response, Holton turns his attention to the nature of that process. Exercising second-level choice consists (in his model) of four stages: deliberation, judgement, choice, and action (p.5). By way of illustration, consider this text adventure of my own devising:

> You reach a fork in the road.
> > *Investigate fork*
> The left fork passes through a field. The right fork descends into a fast-flowing river.
> > *Go left*
> You take the left fork.

Presented with a choice ("You reach a fork in the road") the participant *deliberates* over the relative merits of the available options and their likely consequences ("investigate fork"), *judges* what they believe to be the right course based on those deliberations, *chooses* which option is best and, finally, *acts* (*"*Go left"*)*. As Holton himself admits, the third step is the unhappiest (or least convincing) of the four; it either echoes the judgement stage, or offers a simple moment of indecision before acting on your judgement anyway. Nonetheless this stage is important, since there is a difference between judgement and choice, just as there is a difference between choice and action. If I am standing by a cold swimming pool I may know that I will dive in, but there is a moment where I make the conscious decision to do so.

Holton's model appears satisfactory for the act of choice, and certainly it works for an idealised scenario in which choices can all be judged by the same standards. Holton recognises, however, that in reality choices may be "incommensurate" for any number of reasons: "because we have no idea how, in principle, to go about ranking [them]; or because we know how to do it in principle but can't in practice; or because whilst we can do it in practice, we don't think any benefits that might be gained are worth the effort". Imagine you are choosing between paint colours for a living room. If you have no aesthetic sense, you fall foul of Holton's first concern; if you know that cold colours work in that kind of space but cannot imagine how they would match the new sofa, you fall foul of the second; finally, if interior décor is of no interest to you, you fall foul of the third. Arguing that pursuing ad-hoc commensurability represents a "difficult, cognitively expensive business" Holton continues that in the majority of cases, "we choose what to do without ever having made a judgment about what would be best — we decide *to* without deciding *that*". This, he concludes, raises the key and pertinent question: "how can choosing ever be any more than arbitrary picking?" Unless you are certain that there is no way in which competing options can be compared (Holton argues that he has "never recalled it ever happening" to him) then we are forced to make decisions despite not being certain that "there is no comparison to be made." You purchase the paint, hoping that it will work in the space, but ultimately you are guessing (Holton, 2006, p.7).

Holton concludes that "…our experience of choice imbue[s] it with three characteristics: it is an act, one that is undetermined by our (conscious) beliefs and desires, and one that has effect on our actions" (p.15), a definition against which we will judge hypertext fiction's choice modes in Chapter 5.

To summarise: this section explored the concepts of freedom and choice in general terms. Through the work of Adler, Berlin, and Holton, we have seen that these are not binary states, but complex principles gathered under a convenient nuclear definition. External and internal conditions acting on a choice may in fact invalidate it as meaningful to the subject. Berlin offered us two distinct ways to conceptualise liberty: negative and positive. Negative liberty seeks to demarcate a space within which we are free from any coercive influence. As Taylor points out, this focus on excluding external influences ignores those internalised beliefs that may prevent us from acting as we might wish, meaning that negative liberty is perhaps more an ideological aspiration than a realistic framework. Positive liberty, in contrast, has no need to demarcate a free space, since it is concerned with the pragmatic scaling-up of useful

rules from an individual to a universal level; our own internalised self-limitations might be undermined by a national project of personal improvement, for example. Taylor concluded that while negative liberty offered a grand *opportunity* for freedom, positive liberty concerns itself more with the exercise or *use* of liberty in practice.

Whichever view you subscribe to, it is clear that these are two very different approaches to freedom: negative liberty is concerned with protecting the individual from undue outside influence, while the "positive" in positive liberty signals its preference for a view of freedom as rationalist social project. This distinction between the *opportunity* and *use* concepts of liberty (between the theory and practice of freedom, in a sense) can be married to Richard Holton's distinction between first order choice, which requires only the opportunity to make a decision, and the second order, which requires certain additional conditions to be met.

These conditions – a moral code cannot be applicable; options cannot be commensurate – seem fundamentally about solvability. If the answer is too obvious or obtuse, the choice cannot have meaning to the subject; it is only in the middle ground, in which the subject has sufficient information to choose but there is no clear correct answer, that we find a genuine choice.

The above considerations will come into play when we look at the different approaches taken by computer science and literary theory to understanding the notion of liberty. Computers are arguably about creating a set of universal rules that can be applied to all situations, being positivist in both ambition and application. Literary theory, however, is about marking out territory over which the author has no control – demarcating the freedom space that belongs to the reader.

A final aspect of Holton's argument, and one which he moves over in a single paragraph, is the notion of choice as representing a test. Holton sees this as primarily a theological form of choice, dismissing the argument – "God gives us choice so that in failing to err we can pass" (2006, p.6)– from his primarily secular essay. Since this will take on greater relevance when discussing the phenomenology of reading literary hypertext fiction (see Section 5.2), it is worth clarifying the origins of this theological choice.

Holton appears to be paraphrasing part of the common theological response to what is called the *logical problem of evil*. Asked why God permits evil to exist, some theologians (Irenaeus, Augustine, Luther &c.) concluded that it would be impossible to make moral choices without the possibility of choosing the immoral option. This leads philosopher J.L. Mackie to ask

why God could not have “made men such that they always freely choose the good?” (1955, p.209) Could an omnicapable God not create a human race incapable of making evil choices, thereby negating evil itself? Rather than get embroiled in a two thousand year old theological debate, I would like to approach this test from a different angle. Instead of crafting the free will of the individual, why not create an environment in which the available options always produced a desirable outcome? By defining the limits of the choice, it would be possible to coerce the individual into doing as they are instructed. Rather than changing the morality of the participant, restrict the available choices they can make.

This notion takes on far greater significance in the phenomenology of reading, but is too specific for a section intended to establish general terms. Before moving to discuss hypertext – the material focus of this essay – it is necessary to take a brief diversion to establish the complex relationship between choice, interactivity, and narrative. While interrogating the nexus of these three complex terms is perhaps too specific for a general introduction, it is essential for an adequate understanding the field.

1.3.3.1 Choice, Interactivity, Narrative

For many scholars, choice and interactivity are inextricably linked (Adams, 1999; Mateas & Stern, 2006, p.643). As game designer and academic Chris Crawford (2003, p.191) puts it, “every interactive application must give its user a reasonable amount of choice. No choice, no interactivity. This is not a rule of thumb, it is an absolute, uncompromising principle”. Despite the absolutist language Crawford establishes a very low barrier for what constitutes interactivity, with *reasonable* as a qualifier. Interactivity and agency are not binary qualities – either present or absent – but a continuum, the former influencing our experience of the latter. “Just as chlorophyll was used to sell toothpaste in the 1950s”, writes George Landow (2006, p.41-2), so should we exercise due scepticism when discussing the potency or potential of interactivity in overly general terms. Digital interactivity, Landow concluded in the same work, does not always give users meaningful choice, recalling (by way of illustration) a 1988 conference in which the speaker presented the following dialog box:

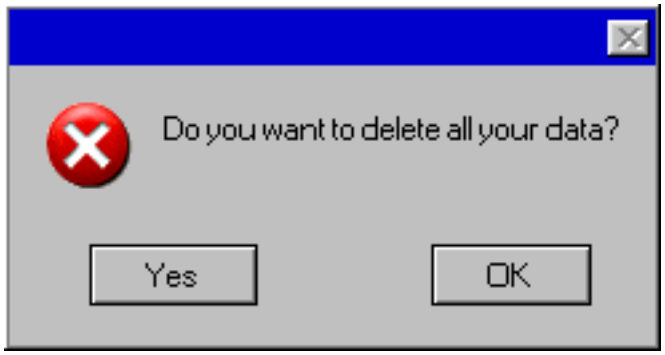

Figure 1: Dialog box (reproduced)

Are we making a choice? Certainly two options have been presented, but the outcomes are entirely under the designer's control; only one outcome is possible. I would suggest that this undermines Aarseth's earlier suggestion (1994, p.54) that a linear text "can flirt with nonlinearity, but the nonlinear cannot lie and pretend to be linear". Not only can the nonlinear easily pretend to be linear, it can deceive the reader into believing that a linear path is the product of their own choices. If we are instead to consider nonlinear as describing a work in which no throughline exists, this is a tautology: a text is nonlinear if it is nonlinear. At least this dialog box acknowledges the narrow choice it offers (see Section 6.2) rather than attempting to obfuscate the lack of impact this decision has on the outcome.

In their 2003 book *Rules of Play,* Katie Salen and Eric Zimmerman write that the meaning of an action in a game "resides in the relationship between action and outcome" (p.34), an idea that can be adapted to wider notions of interactivity, since the authors themselves define meaning as "the emotional and psychological experience" rather than in more specific semiotic terms. This meaning derives from "the interaction between players and the system", with players "making choices and taking actions" (p.33). In her groundbreaking work *Hamlet on the Holodeck,* Janet Murray similarly defines agency as "the satisfying power to take meaningful action and see the results of our decisions and choices" (1997, p.126), a definition which fits neatly with Salen and Zimmerman's ideas[6] and validates the idea of choice as a continuum, in which the reader's perception of how meaningful their decisions are can be qualified.

Maximising the experience of control over decisions and choices seems a laudable ambition. What consequence does escalating agency have for our experience of narrative,

[6] This creates a rather confusing inversion, since Murray seems to use *agency* to describe a quality of choice in which our actions are meaningful and alter subsequent evens, while Holton previously used the term to describe a state in which decisions are automatic, representing "unexercised capacity to choose" (2006, p.13) since the correct choice is clear. If nothing else, this should serve to illustrate the challenge of eliding two conflicting vocabularies when moving across incommensurate fields.

however? Narrative, writes Jeremy Hawthorn, focuses our attention onto “a sequence of events through the direct mediation of a ‘telling’” (1985, viii); the author focuses our attention on specific events in the order and manner they consider important. By contrast, the reader, “however strongly engaged in the unfolding of a narrative, is powerless” (Aarseth 1997, p.4), despite being actively engaged in interpretation. Control over the sequence grants significant power to the author: how different might Hamlet be if his climactic death scene preceded his dithering, rather than concluding it? It is for this reason that Professor Eku Wand argues that the relationship between narration and interactivity “would appear to be antithetical” (2001, p.167), since abandoning the causal relationship between events undermines the logical coherence of the narrative.

This tension between interactivity and narrative coherence, in which increased player choice results in more opportunities to harm the progression of the plot has been given various names: the narrative paradox (Aylett, 1999; Louchart & Aylett, 2003); the boundary problem (Margerko, 2007). Whatever it’s called, it should be seen in the latter terms: a problem, for which the solution might be the use of appropriate tools for guiding the reader’s experience (Figueiredo & Paiva, 2010, 2011; Hargood *et al.* 2012a), to abandon the idea that plot progression falls within the control of the author, or to pass responsibility to one artificial intelligence or another.

Contemporary scholars in the field have largely reconciled themselves with disparity of control between authors and readers. Discussing the advantage of integrating location-aware smartphones with hypertext, Mike Jewell & Clare Hooper (2011) argue that readers can “influence the course of the story with their location”, offering the example of a player visiting the church before a coffee house, thereby missing a significant scene with a newspaper seller. In a more recent paper Packer *et al.* are more candid about the methods by which authors can control readers, though their description of three ways in which an author might guide a reader are still euphemistic: restricting reader choices can “encourage [and] influence” their free navigation of the narrative (2017). Writing and landscape are suggested as investing readers with a greater sense of agency, since these can be explored relatively unfettered, while narrative logic (in the gating of lexia, for example) is considered the “main way to control reader progress.” Both adopt the euphemistic language of influence, encouragement; coercion, as it were.

This section sought to establish in broad terms some necessary vocabulary as pertains to the philosophical matters of free will, choice, and liberty. The following section will move to the material focus of this essay: hypertext itself.

1.3.4 Hypertext

As various scholars have noted (Aarseth, 1994, p.52; Landow, 1994, p.30; Liestøl, 1994, p.104), the word *hypertext* has been used to describe very different systems and phenomena, even within the confines of conventional link-node hypertext. Nelson offered the compact suggestion of "non-sequential writing – text that branches and allows choice to the reader, best read at an interactive screen" (1993). Subsequent writers across various fields (Gaggi, 1997, p.122; Landow, 2006, p.2; McGann, 2001, p.73; Murray, 1997, p.56) have adopted this definition, and it is an adequate starting point (though it ignores several key features of the medium - see Section 4.3 and 5.1.1). To understand historical discussions of the medium, however, it is helpful to discuss four generalised prefixes, articulated by George Landow as twin binaries: *networked* vs. *stand-alone* hypertext systems, and *read-only* vs. *user-editable* ones (1994, p.9).

Before explaining this approach, a word on methodology: the following diagrams are intentionally rendered as just three lexia and two hyperlinks, to discourage the common assumption (Adams, 1999; Gaggi, 1997, p.102-122; Murray, 1997, p.56) that a hypertext web must necessarily be confusingly large - or worse, "infinite" - since we recognise even this simple system as hypertext. Espen Aarseth (1994, p.63) concurs that the simplest form of nonlinear work consists of a bi-directional fork, which refutes any suggestion that hypertext is defined by scale of interlinking. Michael Joyce's *afternoon,* for example, consists of 538 lexia, just over a third the number of verses in the Book of Genesis. If the latter cannot be described as infinite, then neither should the former. We may "see a World in a Grain of Sand", as William Blake (1803) writes, but infinite interpretation should not be confused with infinite material (see Section 5.1.1.1 for additional discussion). Links are also displayed as monodirectional, since A should not be taken as a canonical "start" but the current location of the reader. Once visited, B1 would become the new starting point for the purposes of these models, the revised "center" of the reader's narrative (Landow, 2006, p.94). These links therefore illustrate the moment of navigation, rather than a map of all possible links within this system; the act rather than the overview, as it were.

Let us now visualise the most restricted form offered by Landow's model:

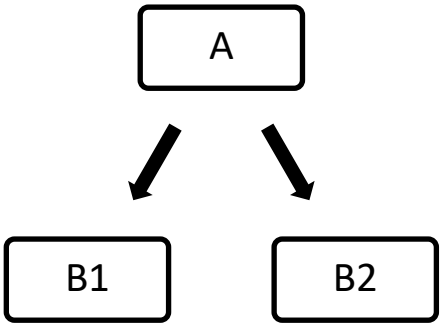

Figure 2: Diagram for stand-alone, read-only hypertext

This figure shows the most restrictive possible model still recognisable as hypertext. Various names have been offered for the two fundamental components shown here, but in line with academic convention this thesis follows French literary theorist Roland Barthes and hypertext theorist George Landow in calling blocks of text *lexia* (Barthes, 1974, p.13; Landow, 1992), and the associative connections between lexia *hyperlinks*, here shown as black arrows. All lexia in this model are the creation of an originating author, who also creates the hyperlinks joining them. This is a *stand-alone*, *read-only* system, in which all content is contained within an isolated network structure, and readers are unable to create their own links or modify existing ones.

Moving on, a simplified *networked*, *read-only* model would look like this:

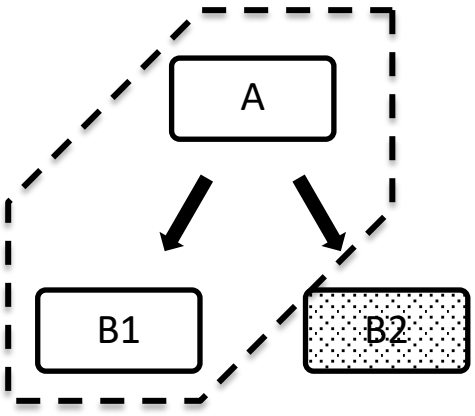

Figure 3: Diagram for networked, read-only hypertext

This system wrests a degree of control from the creator of a hypertext web, but only where they so choose. Being networked means that the author *can* connect their hypertext web to other webs, including those over which they have no control, but they are under no obligation to do so. The eventual reader cannot create or alter the author's hyperlinks, and all elements contained within the dashed hexagon, including the hyperlinks themselves, still falls within the

author's control. An example of a *networked, read-only* system might be the *Encyclopaedia Britannica's* online version, which offers read-only articles written by selected contributors; these articles may in turn link both internally within the website, and to websites outside their control. The BBC's editorial guidelines similarly remind employees that they are a "trusted guide on the web" and as such must ensure that external links are "editorially justifiable", since they will have no control over any future amendments to these pages. The decision to incorporate one web into another rests with the author.

Choosing to link outside the web or not makes authors gatekeepers of such connectivity; my *networked, read-only* academic work, for example, may omit a particularly effective piece of criticism, criticism which a subsequent reviewer cannot incorporate via hyperlink for the benefit of subsequent readers. A degree of control is lost, then, but only a degree.

A *stand-alone, user-editable* system may be modelled in this way:

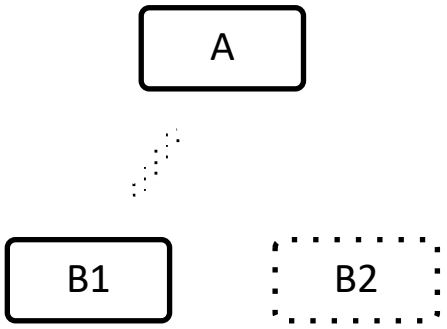

Figure 4: Diagram for stand-alone, user-editable hypertext

In this system it is the user who creates connections between knowledge areas; B2, for example, does not yet exist as a connected area, but the absence of an arrow does not mean a connection cannot be made – only that it hasn't yet. The arrow in this model may represent a link created by the user, or the pre-existence of a hyperlink created by another user. This link is temporal – it might be removed or revised at any time.

While a prevalent form in the 1990s (Apple's now-defunct *HyperCard* system did not operate over the web, instead allowing users to link stacks of virtual cards stored on their Macintosh computers), this model is less common today, largely because it is as easy (and of far greater utility) to allow the user to link outside the original system as to interlink between sections. Some restrictive workplace portals retain this structure, and there are a number of personal wiki projects without wider connectivity.

Finally, a *networked*, *user-editable* system would look like this:

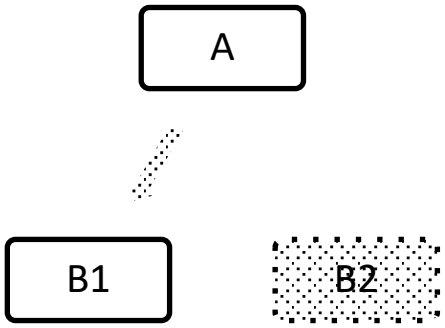

Figure 5: Diagram for networked, user-editable hypertext

In this model connections between lexia are temporal and negotiated. A networked, user-editable system in many respects describes something akin to a blogging platform, in which connections between knowledge areas can be made by the user at will. *Wikipedia* would be another obvious example of this structure, in which connections between sections of the wiki itself and the wider web can be made trivially by a user. It does not describe the world wide web at large, since I only possess editing control over my own sites.

In summary: networked hypertext systems connect with other hypertext systems, much as one website comprising multiple pages can be connected to other websites via hyperlinks, while stand-alone sytems do not. Read-only systems are those in which the links have been pre-authored before being navigated by the user, while user-editable means the reader can create or modify links between content.

How useful is this quaternary structure? Certainly there are weaknesses in the neat groupings it offers. Does the reader of a mutiauthor hypertext document, for example, recognise that work as stand-alone or multiple intersecting networks? An intranet may take the user outside an area over which a particular author has control whilst still not giving them access to (for example) the World Wide Web – why is this not a networked hypertext? Similarly, hypertext systems as read-only fails to acknowledge both the existence of dynamic hypertext (in which links “are computer at the moment they are required [Ashman, 1997]) and relies on a deterministic approach to link navigation.

Why include these prefixes, then? For two reasons. Firstly, to make the common point that hypertext’s nuclear definition accomodates interconnected networks of varying scales, and user control to varying degrees. There is no ur-hypertext, but a myriad of dramatically different approaches which do not suit easy categorisation. Secondly but more importantly, these

categories represent not technical categories, but experiential ones. Landow is attempting to distinguish between perceived affordances for both reader and author. This four-part structure illustrates that the tools an author chooses represents a statement of intent: systems which emphasise the agency of the individual user, versus those which seek to provide an information framework which the user moves through in a more restrictive manner.

Stand-alone, read-only in this interpretation becomes an experiential statement rather than a technical one; a way of understanding the intended affordances of a system and how they are used. Is the reader able to create what is broadly considered the fundamental tool of hypertext authorship (a hyperlink)? Given the near-universal anxiety about the boundaries of the work found in the literature (see p.53), doesn't knowing that it is impossible to move outside the boundaries of the current web as defined by a previous author or authors represent a weakness in its affordances, even if the reader is allowed to create hyperlinks within this network? Stand-alone, read-only should be understood as an exclusive rather than an inclusive category, foregrounding the absence of certain features rather than the presence of others. These models evidence a view of hypertext that is still bound up with an historic understanding of readers and authors. The stand-alone, read-only framing speaks to an idea of the work as recognisably that of a single author or authors, one that does not permit the reader to move outside the specific web in which they find themselves. Easy interoperability between hypertext systems, and the notion that nobody really runs the show, is what these scholars mean by "stand-alone" versus "networked". All connections in such systems are otherwise under the jurisdiction of a notional author-figure, whether this be a collective or an individual; whatever the author is, reader, be assured it's not you.

When reading stand-alone over the forthcoming chapters, then, it should be with the understanding that this relates to the packaging of hypertext works as being the product of a single author, not permitting connection outside the current web. It is a statement of ownership more than it is necessarily a material description.

Liestøl simplifies Landow's distinction into *resources* and *environments*: resources permit the user to "read, copy, and navigate" through a fixed web of fixed documents, while an environment "allows the reader to add documents and links" (1994, p.111). This distinction is, one suspects, intentionally modelled on our understanding of reading and writing in general; the

former offers an experience closely akin to reading a linear printed work, while the latter offers a creative model more akin to collaborative writing project.

The four models above can be seen as a discrete linear scale, moving from an approach in which navigation and content are considered the preserve of an author, to a system in which author and reader's roles become almost synonymous. Problematic as they may be, they still offer a useful lens through which to view the perceived affordances of hypertext systems from a 1990s perspective. Viewed too from the perspective of Adler's circumstantial freedom, we can see that it is the *networked user-editable* hypertext that promises the greatest potential to the user, and *stand-alone read-only* that offers the least. It is interesting, then, that Landow identifies the stand-alone, read-only hypertext paradigm as the most commonly adapted for purposes of literary fiction (2006, p.107), a situation largely unchanged today (see Ensslin, 2007; also Section 6.2) with works tending towards self-contained experiences, with link/node navigation still dominant. How did this approach come to be so dominant?

1.3.5 Hypertext fiction

Michael Joyce's 1987 work *afternoon, a story* arguably defines the formal qualities of much subsequent hypertext fiction: "more than one entry point, many internal branches, and no clear ending" (Murray, 1997, p.56). Many significant early theorists dedicate a chapter or section to *afternoon* (Aarseth, 1994, p.69; Bolter, 2001; Liestøl, 1994; Yellowlees-Douglas, 2003) and it continues to be a touchstone where hypertext fiction is still discussed (Pope, 2010; Thomas, 2007). Espen Aarseth goes so far as to invoke Foucault's founders of discursivity, claiming that Joyce created "not merely a new work but a new medium" (1997, p.164). In a review displayed prominently on the *StorySpace* website, still the foremost publisher of literary hypertext fiction, it is suggested (with a touch of hubris) that *afternoon* is "to the hypertext...interactive novel what the Gutenberg Bible is to publishing", positioning Joyce as founder not fundamentally of thematic paradigms but of formal ones.[7] Echoes of *afternoon's* intellectual concerns resonate through subsequent literary hypertext fiction, to the detriment perhaps of the relatively small number of other works that have attempted to exploit the mechanics of hypertext to different ends (see p.205). In this respect it has become the exemplar for discussions of the medium.

afternoon is (by Landow's definition) a quintessential stand-alone, read-only work. Users are not permitted to author links between lexia, or indeed to directly alter the work in any

[7] It is fair to note that the enormous critical attention lavished on a relatively small canon of early works is perhaps indicative of a medium as much written about as read.

way. Nelson's reductive definition of hypertext as simply non-sequential writing proved popular with hypertext fiction theorists, perhaps due in part to its omission of the networked and user-editable components implicit in Nelson's more developed definitions (see Section 4.3). For these critics, the liberating potential of hypertext (for literary fiction at least) lay in the ability of readers to follow pre-determined hyperlinks. Bolter is typical in focussing on the absence of a "canonical order" (1994, p.112), explaining that "in that simple fact" the reader's relationship to the text is changed, becoming "a multiplicity without the imposition of a principle of domination." For those seeking to understand hypertext fiction's potential to liberate the reader, it was considered the presence of hyperlinks (and the choices they permit) that defined hypertext's literary potential (see Section 5.1.1). To understand how hyperlinks can offer choices necessitates a preliminary, perhaps premature dip into the depths of Continental literary theory. Understanding narrative as split between *what* is told, and the manner of its telling, will help us understand the levels at which agency can be introduced into hypertext fiction.

Narrative, argues Professor Michael Toolan is "a perceived sequence of non-randomly connected events" (2001, p.8). Nothing in this definition requires that the narrative be fictional, printed on paper, or any other criteria by which we might define it; only a perception on the part of either recipient or source that these events are connected. Imagine you are on a romantic first date, at which you are asked that most notorious question: "So tell me about yourself." You take a deep breath and consider your options. Omit a recent and painful break-up? Precede an embarrassing revelation with several charming anecdotes? For Russian Formalist theorists of narrative the latter would historically be termed *fabula,* that process by which the author identifies which elements of the story world the reader should be exposed to; the former *sjuzhet,* the manner in which these elements are exposed. The resistance of author Lee Childs to giving his protagonist Jack Reacher a backstory represents an authorial decision taken at the *fabula* level; Evelyn Waugh opening *Brideshead Revisited* with a vision of the titular house being used as a military base before slipping back to its declining years a decision at the *sjuzhet*.

Control over the selection of elements to include within the work and the sequence in which these elements are presented represents a significant part of the author's power to construct narrative. The navigation of a hypertext work therefore represents a significant rupture in this process, offering as it does the potential for readers to either access elements "out of sequence" or not at all. Hyperlinks thus introduce the potential for a reader to determine their own path through the narrative. Whether this constitutes meaningful choice is the subject of

subsequent sections, but certainly the potential exists for readers to reorder events as a result of their browsing. In the works highlighted over the forthcoming chapters, responsibility is discussed as being split to varying degrees between author and reader. Where readers cannot contribute to the content of the individual nodes, the author ultimately exerts control at the *fabula* level, since they determine what is and is not included within the work (see section 5.2.1), even where gating logic may prevent certain areas from being accessed based on previous reader decisions (see Section 6.1). Some critics have argued that hyperlinks permit a level of *Sjuzhet* control, permitting readers to encounter these nodes in the sequence of their choosing. This problematic assertion will be the focus of Chapter 5, but it is important for now to distinguish between choice as a matter of content and choice in terms of sequence.

While in a clarificatory mode, there are a handful of other contentious terms that appear under the umbrella of hypertext fiction scholarship. Communication has historically circulated around two agents and a means of communication between them: teller/tale/addressee (Toolan, 2001, p.1), sender/channel/receiver (Shannon, 1948), or the more commonplace author/work/reader. Writing as he was from the perspective of a pioneer, Nelson's early work on hypertext initially perpetuated this idea of an independent author and reader, the former being the creator of the space which the latter explores:

> In ordinary writing the author may break sequence for footnotes or insets, but the use of print on paper makes some basic sequence essential… [hypertext's] jumpable interconnections become part of the writing, entering into the prose medium itself as a new way to provide explanations and details to the seeker. These links may be artfully arranged according to meanings or relations in the subject, and possible tangents in the reader's mind (1974, p.91).

The writer is configuring the space according to what they believe the reader may be interested in, or more accurately, what they believe the reader *should* be interested in. The terms "reader" and "author" are deeply historicised, bearing an implicit assumption about purpose, power, and behaviour. While aware of this concern, Aarseth (1994, p.58) still offers as equally valid *reader/receiver/audience* and *writer/sender/author*, while on the other hand Landow's vascillation between "reader-writer" and "very active reader" shows him straining at the limited vocabulary available in his own time (2006, p.11-13). What Landow was struggling with appears to be the aporia of accomodating affordances from different networked textualities under one semantic umbrella. The reader-user of a networked, user-editable hypertext system accesses more of the "writer's tools" than one in stand-alone, read-only systems, since they are able to both author links between existing nodes and take subsequent navigators outside the current

nodal network. These tools also carry the assumption of writerly intent in their application. It is wrong to suggest that readerly empowerment is a continuum, with linear print fiction at one end and networked, user-editable hypertext at the other, since it tacitly places stand-alone, read-only hypertext (however useful that term may prove to be) somewhere in the middle. The latter's problematic relationship with liberty is the focus of this thesis.

So loaded are these terms with centuries of assumptions, it seems necessary at least to acknowledge the inadequacy these terms. If *reader* and *writer* are too loaded, though, which alternate terms should we use? *User* applied only to readers feel like a pseudonym, while applying it to both readers and writers imprecisely implies equal control over the medium. In the spirit of expediency I turn to Derrida and his useful term *sous rapture* (1974, p.23). When dealing with terms that are inadequate but necessary to a discussion (as is the case with reader or writer here) Derrida (using a technique borrowed from Heidigger) advocated placing a strikethrough, like this: ~~reader~~. This indicated that while the term had to be used, it bore too many historical associations to be presented uncritically. In the interest of legibility, I have not included the strikethrough here but ask that the reader treat each instance of such terms with due scepticism and flexibility.

Finally, a brief word on multilinear vs. nonlinear. The distinction between the two is a largely academic one, but a critical preference for multilinear over the more limited term nonlinear is widely accepted (Aarseth, 1997, p.46; Bolter, 2001, p.128; Landow, 2006, p.4; Rosenberg, 1994, p.275) and will be used here where possible. Multilinear better reflects the radiant but not infinite narrative lines that lead from each lexia of a hypertext work. A related etymological concern (that for the reader their experience is explicitely linear) will be discussed at appropriate points in Chapter 4.

That frames of reference and terminology can be so contentious leads us to the final nuclear definition: that of language itself. In his notable work *On Grammatology,* Jacques Derrida (1974, p.163) argued that writers write "*in* a language and *in* a logic" whose structures the writer can never entirely overcome. The structure of language has the capacity to shape the content of our communication, an idea noted elsewhere (Chomsky, 1957; Landow, 2006, p.30-31; Postman, 2005, p.7;) and critiqued in Chapter 3. The following section discusses hypertext as a language: firstly, whether it can be considered a language at all; secondly, what consequence this framing might have for understanding its affordances.

1.3.6 Language

A brief survey of key academic linguists (Saussure, 1983; Bloch & Trager, 1942; Chomsky, 1957; Lyons, 1968; Halliday, 2003) seems to corroborate the definition of language arrived at by influential early twentieth-century linguist Edward Sapir: "a purely human and non-instinctive method of communicating ideas, emotions, and desires by means of a system of voluntarily produced symbols" (2010, p.8). That communication requires a shared and accepted mode of exchange alludes to Ferdinand de Sausurre, the so-called father of linguistics, and his widely accepted notion that "there is no inherent or necessary relationship between that which carries meaning, and the meaning carried" (1974, p.2). We can nonetheless communicate complex ideas through these arbitrary symbols, as evidenced by this very sentence.

We may now turn to the challenge of defining language within computer science. In keeping with the technical nature of the field, most works tend to focus on the distinction between programming, mark-up, and scripting languages. Pursuing a nuclear definition for language in computer science, we might return to Sapir's definition of language, and consider whether anything precludes it from being used here. Computer scientists Stuart Card, Thomas Moran, and Allen Newell (1986, p. 4) define communication between computer and user as a "stream of symbols flowing back and forth" - a reassuring place to begin since it so closely models Sapir's definition. To test its utility, we may consider this definition in the context of hypertext markup language (HTML). Tags within HTML are indeed symbols intentionally codified and utilised by programmers, with the goal of soliciting a response. The <i> tag, for example, generates italicised text; italics in turn communicate a range of contextual meanings, including its use for emphasis (I can't *believe* it!), denoting foreign languages (*sotto voce*), indicating that the affected line is intended to be internal monologue (I looked into his eyes. *Do you know?* I thought.) On this basis it seems that this nuclear definition of language and hypertext as a language share enough characteristics to be considered at the very least sibling categories for my purposes, in particular the latter parts of Chapter 4.

Writers of hypertext fiction compose in the parallel languages of hypertext and natural language text, each of which seeks to impose its own logic upon the process. Edward Sapir (in conjunction with his student Benjamin Whorf) is known in part for the Sapir-Whorf Hypothesis, remarkable not least because the two people for which it is named neither articulated the hypothesis nor even wrote a research paper together. The closest Whorf came to espousing the hypothesis is a 1941 argument that "we see and hear and otherwise experience very largely as

we do because the language habits of our [distinct] community predispose certain choices of interpretation" (p.77). In other words, the language we use influences our worldview, with experiences and concepts being filtered by the language we use to pattern our thoughts.

Historic efforts to prove the Sapir-Whorf hypothesis have not been a resounding success. An exhaustive 600-page study by German-American linguist Eckhart Malotki, for example, disproved Sapir protégé Benjamin Whorf's own suggestion that Hopi tribes lacked the grammar for (and therefore a conception of) linear time (1983). A subsequent revival of linguistic relativism (Boroditsky, 2001; Evans & Levinson, 2009; Heim, 1987, p.30) over half a century after its first articulation, coupled with evidence of at least a weak effect (Athanasopoulos *et al,* 2015; Everett, 2005; Flecken *et al.* 2014; Harnard, 2005) suggest that it may be more the *extent* rather than *existence* of the effect which is under discussion, and a widely used primer in communication studies seems confident in concluding that "symbols mediate and structure all our experience because they structure our ability to perceive and interpret what goes on around us" (Baran & Davis, 2012, p.318). Above all, however, it must be noted that it is the artificial nature of programming languages that permits this approach. Languages in computer science are constructed, built intentionally from the ground up, and therefore permits greater coercive potential (see Section 4.3.2).

Accepting that programming languages share at least some characteristics with written language, it is interesting to consider the more controversial extension of the Sapir/Whorf hypothesis: that language *determines* worldview. This position is well articulated by Whorf when he states, "we cannot talk at all except by subscribing to the organization and classification of data which the agreement decrees" (1956, p.231). In the study of linguistics this approach is largely discredited, often for reasons of uncertainty (linguistic bias of the test cannot be mitigated [Penn, 1972, p.33]; human thought cannot be recorded as a control; as with the weak version, there is insufficient evidence of this effect [Schlesinger, 1991].) Language standardisation resulting in thought regulation also suffers the same credibility issue as Orwellian Newspeak, since it does not fully account for the evolutionary nature of language in use. Neither is this a new argument: indeed, we see echoes of this approach in the work of Ferdinand de Saussure, founder of modern linguistics, who wrote that:

> no individual is able, even if he wished, to modify in any way a choice already established in the language… if we wish to demonstrate that the rules a community accepts are imposed upon it and not freely agreed to, it is language which offers the most striking proof" (1983, p.71).

Conventional language does not fully support Saussure's vision as presented here, since parallel dialects can indeed evolve within the same community, but there is no dialect in a particular programming language. Defacto standards derive from the affordances built into the language by its developers. In their excellent work on the nature of standardised English, linguists James and Leslie Milroy argue that the "public guardians of English usage" encourage the population to believe that "only the standard is correct" (1998, p.16). This results in those who utilise non-standard English becoming marginalised (consider African American Vernacular English, or the standardised middle-class Portuguese found in Brazilian newspapers.) [8] The dominant understanding of a particular term (or the dominance of a particular approach within a field of study) precludes other ways of seeing an emerging medium as an orthodoxy emerges. In a work indebted to Saussure, Jacques Lacan offers ideas in a similar vein, which will help frame the importance of these theories of language to continental literary theorists.

Another Paris intellectual whose writing had a significant impact on Roland Barthes and Michel Foucault, Lacan is famously obtuse and self-contradictory, making a gloss of his more complex ideas a daunting prospect, and one well outside the scope of this study. Like Whorf, however, he believed there existed a connection between language and our world view. The unconscious, he said, is "structured like a language" (1998, p.48) whose rules are learnt when as infants we interact with our environment. The 'language' of social behavior is defined by these rules, permitting us to respond appropriately in new social situations. Our adult world may be framed as a complex machine "made only with words" (1978, p.63), since it is this unconscious language that allows us to engage with our environment beyond the level of an infant. Language becomes a self-supporting structure.

If language dictates (to an extent) the worldview of the speaker, then understanding how nuclear meanings were adapted by key thinkers in 1960s Continental and hypertext theory will help in exploring how they were subsequently adopted (and adapted) by theorists of hypertext fiction. How does the praxis of terms like liberty, freedom, or authority differ in these independent schools? How compatible were their individual definitions? Do their superficially similar projects mask incompatible intellectual practices? Where such incompatibilities exist, can conventional hypertext fiction effectively reconcile them? These are the questions that will inform this thesis.

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[8] Interestingly, the Milroys contrast this with the academic community, which they consider permissive and pro-diversity (in the sense of being anti-standardisation).

The way in which Nelson and Engelbart, Barthes and Foucault understood notions of liberty in my view complicates the consolidation of antiauthoritarian values from computer science and literary theory into hypertext fiction. The designed material constraints of computer systems are regulatory and coercive of reader behaviour, in a manner I do not consider compatible with Continental literary theory. The standardisation of communicative modes in hypertext is in fact an aspect of regulation, since its job is to provide meaningful quasi-universal parameters for communication. The use of standards as a descriptor is a rather coy way to couch them as emblematic of liberty (the *universal* approach) rather than regulatory (the *permitted* approach). The development of structuring logics intended to remove the presence of repressive authority resulted in a hypertext system that imposed its own epistemic logic on the reader.

1.4 Conclusion

This introductory chapter sought to lay out the argument of this thesis in broad strokes: that the diverse histories of the American counterculture, early computer scientists and 1960s Continental literary theory were artificially drawn together by the work of the early hypertext fiction theorists, in a manner insufficiently critiqued by preceding scholars. This collision (contrasted here with anti-reductive contact languages) yielded a model of hypertext fiction framed by its anti-authorist and liberationist genealogy, one which has a problematic relationship with what might tentatively be called the canon of conventional hypertext fiction (Ensslin, 2007). In order to frame this argument for the benefit of future chapters, nuclear meanings of freedom, authority, and choice were offered.

The following chapter will make use of these ideas to situate the argument more clearly, seeking to understand how these relationships worked in practice. Landow (1994, p.33) called on scholars to “unravel the relations between information technologies, past and present, and cultural assumptions, including our conceptions of literature, theory, self, power, and property.” This thesis considers how entangled those ideas really were in the first place.

Chapter 2 A Problematic Convergence

> **Lady:** Will you please, shut up!
> **Liebkind:** You shut up! You are the audience! I am the author! I OUTRANK you!
> - *The Producers* 1967

This chapter will establish the competing approaches to authority found in hypertext and Continental theory, before considering their problematic convergence in hypertext fiction..

The initial section outlines the anti-authorist arguments of Roland Barthes and Michel Foucault, and the potential of hypertext systems to illuminate these arguments in a way books could not.

The second section discusses this argument in more detail, framed by George Landow's book *Hypertext.* As this argument is located primarily in the particular moment of 1990s hypertext theory, supporting evidence will be sought from then-contemporary scholars including George Landow, Jane Yellowlees-Douglas, Jay Bolter, Janet Murray, Mark Bernstein, David S. Miall, N. Katherine Hayles and Robert Coover, and practitioners like Shelley Jackson, Michael Joyce and Stuart Moulthrop. We begin in 1967, with the publication of Roland Barthes' essay *The Death of the Author*.

2.1 The Convergence Argument

Written in response to the practice of authorial biography being used to derive meaning from a literary work, Barthes's essay (1993 [1967], p.148) first establishes that readers interpret a work in many different ways, rather than seeking a sanctioned authorial intent: "we know that a text does not consist of a … single 'theological' meaning (the 'message' of the Author-God)". The author, in fact, may not really appreciate what their work is "about" in a wider historical or cultural sense. Instead the author draws together myriad conscious and subconscious influences into a single work. "The text is a tissue of citations," Barthes continues, "resulting from the thousand sources of culture." This approach abstracts the author even further, making them simply the figure that binds together disparate cultural strands into a written work. Foucault (1972, p.23) deepens this observation, arguing that the "frontiers of a book are never clear-cut," because "it is caught up in a system of references to other books, other texts, other sentences: it is a node within a network [of references]". The printed book here becomes a scrapbook, its contents snapshots that reference a wider world, pulled together into a single

work by the author. A passage from Dickens, for example, is the product of various intersecting historical elements, drawn together in a single historically located linear print form.

How might our approach to writing be adapted to better suit this newly articulated set of principles, acknowledging the book as the quasi-arbitrary concretization of competing intellectual strands? Barthes helpfully goes on to later identify the qualities of this ideal text:

> … the networks are many and interact, without any one being able to surpass the rest; this text is a galaxy of signifiers, not a structure of signifieds; it has no beginning, it is reversible; we gain access to it by several entrances, none of which can be authoritatively declared to be the main one. (Barthes, 1974, p.6).

This is an ideal text in the sense of utopia being an ideal place, ideal in part because it did not - could not – exist at the time of writing; so assumed the later scholars of hypertext literary theory. These 1960s literary theorists were assumed to be straining against the limitations of the book, which George Landow (2006, p.82) calls “the most complex instance of printing technology”, which could not materially accommodate the qualities of an ideal text that Barthes envisioned. Barthes, for example, speaks of a “reversible” text, a linear metaphor for the direction of reading which these critics believe betrays the blinkered view of one raised in a world of predominantly linear print narrative.

In a commercial sense, social and economic factors also led to the unrepresentative and selective publication of printed works (Bolter, 2001, p.48-49) that privileged a certain point of view. This selectiveness in turn gave rise to the notion that “each author produces something unique and identifiable as property” (Landow, 2006, p.140). An independent, independently coherent work, it is argued, reinforces the notion of an independent, independently coherent writer. Professor Johndan Johnson-Eilola argues that the physical stability of books renders them “machines for transmitting authority" (1997, p. 136); Espen Aarseth (1994, p.57) describes boundaries between literary works as a cultural construct, a product of print media, while Landow echoes that “this so-called autonomy had been illusory and existed as little more than the difficulty that readers had in perceiving connections between documents” (2006, p.126). Despite a desire amongst 1960s continental literary theorists to see literary works as the nexus of multiple interlocking cultural strands, in so doing eroding the dominance of the author, they were ultimately stymied by the parameters of the linear printed work, and its fixed and unyielding character. These are the assumptions of scholars of the first wave.

Barthes and Foucault are seen as struggling against the limitations of linear printed works, planting the trees beneath which they would never sit. Meanwhile, a continent and

academic field away, computer scientists like Theodor Nelson and Douglas Engelbart were working on new ways to structure writing: non-sequential, branching, collaborative. The perceived parallels between the "ideal text" of Barthes and Foucault, and hypertext as a medium, are a central subject of George Landow's influential, thrice-revised book *Hypertext.*

Hypertext makes a startling observation: that two previously unconnected disciplinary areas – computer science and poststructuralist literary theory – in fact share common cause. "When designers of computer software examine the pages of *Glas* or *Of Grammatology*," Landow (2006, p.1) writes, "they encounter a digitalized, hypertextual Derrida. When literary theorists examine *Literary Machines*, they encounter a deconstructionist or poststructuralist [Ted] Nelson". Landow over-mythologizes the disciplinary distinctiveness here – Nelson, for example, is a sociologist by training, not a programmer, and was reportedly unable to operate his own Macintosh computer (Wolf, 1995); Douglas Engelbart was familiar enough with the study of linguistics to make casual references to the Sapir-Whorf hypothesis in an American Air Force research paper (1962). Nonetheless, Landow hopes to solicit "shocks of recognition" as he presents the parallels, a phrase almost certainly chosen to evoke the strident opening sentences of Marshall McLuhan's *Understanding Media*. The *elegance* of this chronological and intellectual bridge is frankly undeniable: two parallel but distinct traditions unwittingly pursuing mutually coherent goals. For Landow, hypertext represents the proving of the poststructuralist position, as if continental theorists were devising the theoretical framework for hypertext's affordances.

In Landow's own words, writers on both hypertext and poststructuralist literary theory argue that we must "abandon conceptual systems founded upon ideas of center, margin, hierarchy, and linearity and replace them with ones of multilinearity, nodes, links, and networks" (2006, p.2). For supporting evidence (at least superficially) we need only return on the one hand to Barthes' conception of the ideal text, in which "the networks are many and interact" and in which there is "no beginning" (1974, p.6); on the other, to Theodor Nelson's definition of hypertext: "a combination of natural language text with the computer's capacity for interactive branching" (1965). For these early scholars, hypertext is considered nothing less than the transmission of Foucault and Barthes' ideas from theory to practice: "Once ensconced within a network of electronic links," Landow (2006, p.137) argues, "a document no longer exists by itself. It always exists in relation to other documents in a way that a book or printed document never does and never can". The printed book, whose authoritative structure denies the

presence of other works, is replaced by a medium that celebrates intertextuality, by making intellectual connections explicit rather than implicit. The ambitions of Barthes and Foucault are therefore said to be realized in the medium of hypertext or, to use Landow's pithy phrase, "contemporary theory proposes … hypertext disposes" (2006, p.127).

Perhaps the most startling outcome of this proposed merger, this argument continues, is that readers become writers. "It is a commonplace in hypertext rhetoric that the reader is also concurrently a writer," argues Mark Rosenberg (1996), while Gunnar Birkerts describes hypertext as "a mighty blow" to the long-static relationship between reader and writer that "rewrites the contract from start to finish" (1994, p.96). For such scholars, hypertext fiction in all its forms promises "the disappearance of the author and reader as coherent imagined selves constituted through the stabilizing form of the bound book" (Bloch and Hesse, 1993, p.8) with a subsequent "disordering of authorial agency in favor of an increasingly active reader". The rigid framework of the linear printed work explodes into a network of possibilities, in which readers "recenter and reorganize the materials they encounter according to their own interests (Landow, 2006, p.94), fulfilling the promise of Barthes' argument. Immediate criticism of this argument generally focused on the pleasure of surrendering to an author (Whitby, 1993; Birkerts, 1997; Keep *et al.* 2000;), rather than the framing itself, with subsequent questions relating to the counterbalancing disorientation experienced by the reader (Miall 2000; Cantoni & Paolini, 2001; Mazzali-Lurati, 2007; Ensslin, 2007; Bell, 2010, see Chapter 1) and further calls for empirical study.

"All writing becomes collaborative writing with hypertext", Landow concludes (2006, p. 104), just as Terence Harpold (1995, p.173) recognises no distinction between readers and authors in hypertext of any form. The umbrella term *hypertext*, we may recall, was simultaneously acknowledged to describe very different systems (Landow, 1994, p.30; Aarseth, 1994, p.52; Liestøl, 1994, p.104; see also Section 1.3.4). In keeping with other theorists (Aarseth, 1994, p.67; Ess, 1994, p.226; Mazzali-Lurati, 2007, p.135), however, Landow considers hypertext to be defined by the hyperlink. The hyperlink, he argues, embodies

> Julia Kristeva's notion of intertextuality, Mikhail Bakhtin's emphasis upon multivocality, Michel Foucault's conception of networks of power, and Gilles Delueze and Felix Guattari's ideas of rhizomatic, 'nomad thought' (Landow, 1994, p.1)

This frankly startling list of parallels convinces Landow to later describe hypertext as their "almost embarrassingly literal embodiment" (Landow & Delany, 1994, p.7). The hyperlink makes

explicit what for Foucault and Barthes was *implicit* in the act of reading: that connections exist between the words on a page and the wider world around us.

The embarrassingly literal correspondences Landow identifies are not so explicit as they may appear, however. The many, interacting networks of Barthes' ideal text refers neither to the many lexia which might make up an individual work (as in Landow, 2006, p.9) or the multiple interpretations possible through its reading (as in Ensslin, 2007, p.37). In his writings Barthes explicitly refers to many discrete and independent networks that possess the facility to interact; not a work with many cross-referenced passages, then, but an acknowledgement that passages in a document may share greater correspondence with another, entirely independent work than those passages which happen to surround it.

Efforts to manifest Barthes' ambitions materially misrepresent his work. Foregrounding the hyperlink's capacity to remove physical separation between works, Landow (2006, p.115) notes that a networked system "changes the limits of the individual text" by drawing in contradictory or relevant material, narrowing the "phenomenological distance" (p.126) between individual print and manuscript documents. In conventional hypertext, however, only those connections deemed necessary by the author are included. Material presentation of the work as a network of links and nodes has little to do with the metaphorical networks to which Barthes is referring. Navigation at the *Szujet* level may present the work as a hypothetical galaxy of signifiers, but in conventional hypertext specifically, these connections are static and stable, each with a pre-determined signified. Even where the potential exists to have reader behaviour alter the connection between these nodes and links, control over this behaviour resides with the author.

Transcendence of physical limits was not the barrier which most exercised Barthes, and represents a category error that falsely equates material connectivity with metaphorical connectivity. When Barthes refers to the text as a "galaxy of signifiers" he is referencing the question of interpretation, not materiality *per se*. A text should not be a set of answers provided by the author, to be deciphered by the reader; instead the text should offer possibilities that the reader explores themselves. The connections are not embarrassingly literal; it is in fact embarrassing that they would be *taken* literally.

Continental literary theory's philosophical approach to liberating the reader also differs significantly from that of hypertext's pioneers, further undermining the suggestion that their two approaches can be easily synthesised. In a paper outlining the potential of a hypertext system

for the Air Force, computer scientist Douglas Engelbart provides outlines his vision of a hypertext system (see Section 4.2 for a more detailed exploration):

> No one can dominate the show, since seldom do you have to 'listen' to the person concurrent to the developments he is pursuing-- and yet at any time another person can tune in on what he has done and is doing.
>
> One can either take immediate personal issue with another about some feature, anywhere in the structure where he might find something done by the other to which he wants to take issue, or he can append his objection and the associated argument there where the disagreement lies, and tag this with a special cue that signals a point of contention that must ultimately be resolved.
>
> Any idea of the moment by any member can easily be linked to where it can do some good. (Engelbart, 1962)

We can read this in the context of two quotes from Theodor Nelson: the first, a definition of hypertext derived from his ACM conference paper:

> a combination of natural language text with the computer's capacity for interactive branching, or dynamic display of a nonlinear text which cannot be printed conveniently on a conventional page (Nelson, 1965)

and the second, a comment from the initial pages of his 1987 work *Literary Machines:*

> As the most general form of writing, hypertext will not be "another type" of obscure structure, but a framework of reunification. (Note that in the original hypertext system of Douglas Engelbart, who invented electronic text systems, it *was* all together; it is the others who have torn it all apart into incompatible pieces.) (Nelson, 1987, p7-8)

What can we discern from these quotes? Firstly, Engelbart and Nelson share a common project: the flattening of intellectual hierarchies through the interconnection of written material. Secondly and consequently, there are indeed surface similarities between the intellectual project of poststructuralist literary theory and the affordances of hypertext as outlined here. Both disciplines seek in some respects to redefine the relationship between authors and readers, creating a more democratic space in which reading and writing functions intertwine. Landow (2006, p.56) argues that a complete user-editable hypertext system "does not permit a tyrannical, univocal voice" since all participants have equivalent control over the medium, in keeping with the philosophical aims of Barthes *et al*. Thirdly, both Nelson and Engelbart seek to create a single universe of interconnected networks, what Nelson calls a *docuverse*, whose framework in some respect echoes that of Barthes' ideal text.

Literary theory demands that the networks be diverse and discrete; hypertext theory demands that the documents be entirely open to the reader, permitting them to create and negate connections favoured by the author. Denied the intertextual and collaborative framework represented by fuller hypertext systems, conventional hypertext fiction is forced to rely on the hyperlink alone to legitimise its relationship with anti-authorism. This limitation did not deter

early scholars. A linear text takes the reader from one event to another, it is argued, building an argument in what Nelson earlier called a “hierarchy of meaning”. Ideas build upon ideas, an avalanche that buries the reader. By permitting the reader to determine their own path through the hypertext web, to “choose their own order of acquisition, according to their own needs and interests” (Liestøl, 1994, p.103) the hyperlink “rewrites the contract” between reader and writer (Bickerts, 1994, p.163). Landow suggests that whether stand-alone or networked, a hypertext web can be structurally either reliant upon “the linear book” or “the dispersed, multiply centred network organization inherent in electronic linking” (Landow, 1994, p.23). The argument is elegantly summarised by Mazzali-Lurati:

> Thanks to multilinearity, the hypertext reader is not constrained by a predefined reading order; he can choose the reading path he prefers. It is up to him to decide what to read and in which order. Because of this freedom, the hypertext reader appears to occupy a leading position with respect to the author” (2007, p.136)

This justification for conventional hypertext fiction as liberating the reader relies on the idea that the hyperlink alone is sufficient to liberate the reader. For various rephrasings of this first wave consensus that stand-alone, read-only hypertext as defined by Landow embodies Barthes’ ideal text, see Aarseth, 2001, p.16; Adams, 1999; Bickerts, 1994, p.163; Gaggi, 1997, p.103; Kolb, 1994, p.323; Landow, 2006, p.56; Liestøl, 1994, p.87; Miller, 1995; Yellowlees-Douglas, 2003, p.18-19. Conventional hypertext fiction’s finite, authored choices are represented as cognates to the more varied and democratic connections found in Engelbart and Nelson’s approach to hypertext, and the variety of intellectual connections we make during reading. The failure to fully acknowledge this disconnect led to an artificial sense of hypertext’s general relationship with poststructuralist literary theory.

The reader in conventional hypertext fiction is not choosing their own path through the material, but being offered pre-defined paths to choose, an important distinction going forward. “It is the reader, not the author, who largely determines how the reader moves through the system,” Landow (2006, p.343) says, “for the reader can determine the order and principle of investigation”. *Largely* is doing significant work here, since it is the author who wrote the text, created the hyperlinks and located the reader within the web; perhaps *superficially* would be a better term. Earlier in the same work, Landow attributed hypertext’s anti-authority character to three readerly affordances: “to choose his or her own way through the metatext, to annotates text written by others, and to create links between documents written by others” (p.125). If we remove characteristics found only in networked or user-editable hypertext, we are left just one

feature of conventional hypertext fiction upon which to hang this argument: choosing his or her own way through the metatext. Aarseth (2001, p.16) describes the stand-alone, read-only hypertext reader as possessing “the ability to transform the text into something that the instigator of the text could not foresee or plan for". Except, of course, that the reader of a stand-alone, user-editable hypertext is not choosing their way through the metatext, but choosing from the available routes through a metatextual labyrinth. This is not to suggest that these choices are not meaningful to the reader, or that this navigation negates a sense of agency. Instead it is simply an acknowledgement of the author’s significant power to shape and guide the reader’s experience, perhaps to an extent that the reader is unaware. “A rat is free to go anywhere,” writes author Margaret Atwood (1996, p.165), “as long as it stays inside the maze”, but this prescribed freedom should not be mistaken for liberty in a general sense.

In information hypertexts – those designed to facilitate projects or for purely didactic purposes – such a network of authored choices has a place. In this context, stand-alone, read-only hypertext offered “an old-fashioned, traditional, and in many ways still useful author-centered approach” (Landow, 2006, p.58), an observation demonstrating Landow is not entirely comfortable with the seamless transmission of liberty through a more limited system. *Old-fashioned* and *traditional* are not pejoratives in this context, but an acknowledgement of the value to be found in such monodirectional systems for the transmission of meaning. This is why academics tend to pair lectures and seminars – complex concepts are outlined in a consciously asymmetric environment, after which these ideas can be explored more democratically. In a section discussing the pedagogic use of stand-alone, read-only hypertext, Landow calls such hyperlinks “editorially approved connections” (p.105). These hyperlinks are contrasted with students studying through traditional print textbooks, who might obtain “either nonsignificant information or information whose value they might not be able to determine” owing to a lack of external direction from a tutor. “We all know” continues Landow (p.145) “that readers often experience confusion and disorientation simply because they fail to grasp the logic or even meaning of a particular argument” and this equivalence between intellectual confusion and navigational complexity (along with a cavalier attitude towards the reader) is common in criticism of the time (see Section 5.2).

Seeing the hyperlink as a semi-guided tour of the author’s interests – “wander around here and I’ll meet you in the next room” – seems a more realistic way to understand its affordances. Such a guided tour does not offer a galaxy of signifiers, however, but one of signs,

since the author has determined the number of the stars – and named them, too. “All hypertext systems permit the individual reader to choose his or her own center of investigation and experience,” writes Landow (2006, p.56) and the language is telling. The system permits what the author allows, and the reader makes a choice within these structures.

2.2 Conventional Hypertext Fiction: the Reinstatement of the Author

How does conventional hypertext fiction disadvantage the reader? What material qualities of the link-node hypertext coerce them into adopting the author’s intended meaning? In making concrete what for Barthes were abstract intellectual connections, conventional hypertext legitimises and privileges those areas that have been materially connected. Barthes’ essay was encouraging the reader to understand the interconnectedness of texts, and assumed the imaginative capacity to move both within and between individual works. It is not necessary that this capacity to range across works be concretised in order to be real. In offering extensive and complex webs, the illusion of completeness may lead readers to mistake the manufactured connectivity of the conventional hypertext web for its more abstract philosophical counterpart.

That hypertext makes connectivity explicit (by concretising intellectual connections) does not improve the quality of this connectivity. Unless the reader is physically isolated from related works, it is always possible for them to pursue connections between ideas – that is the basis of research, after all. The difference seems to be the frictionless and corporeal connecting of concepts. This approach simply allows the original document to parasitically expand into the space of those to which it is connected. Hypertext systems seek to integrate their networks with one another, externalizing what we do during the reading act rather than permitting this to remain personal and phenomenologically underdetermined.

Hypertext literalises the imaginative human capacity for intertextual connection, simulating connectivity in a way that places interrelationship in the hands of the author. In his book *Electric Language,* Michael Heim voices concern that future writers will feel their works are “directly linked” to others that share their network (1987, p.215). Landow calls these concerns “prophecy and myopia” (2006, p.130). Prophecy, because this was a likely occurrence (witness blogs etc.); myopia, because Landow does not consider this loss of textual autonomy a problem. All works exist within a network of other texts, however – that is what intertextuality means, after all – and again, it seems unnecessary to introduce a material means of integrating supporting material

into a work. When Nelson describes the act of working within a hypertext document, he speaks of it in terms of process:

> It should stand by him during the early periods of muddled confusion, when his ideas are scraps, fragments, phrases, and contradictory overall designs. And it must help him through to the final draft … making the fragments easy to find, and making easier the tentative sequencing and juxtaposing and comparing. (1974, p.87)

These fragments are drawn into connection by the author's intellect, having previously existed only as notional connections. The subsequent concretization of these connections concepts is incommensurate with the rejection of authorial biography found in Barthes' argument (see Section 3.1). The hypertext web becomes a model of the designer's mind, in which fragments are held in fixed relation with one another, underscoring the connections favoured by that particular critic. Gunnar Liestøl reports that Ludwig Wittgenstein "found it difficult to reduce complex thought structures into the continuous linear form of a written text" (1994, p.88), preferring the fragmentary format of his later work. In a hypertext, documents (or parts of documents) can be connected "in any way one chooses to define a connection" (McGann, 2001, p.73), which includes both the intellectual connection of intertextuality, and the explicit connection of an actual hyperlink. To emphasise the former is to privilege connections as understood by the author, and pursuing them is to acknowledge this privilege. Making intertextuality an authorial tool removes its primary strength.

Is the unique intertextuality of the networked text advantageous to the reader? "By its very nature," argues Paul Delaney & George Landow (1995, p.18) "hypertext emphasizes intertextuality in a way that page-bound text in books cannot". Professor of Literature Thais Morgan, however, argues that intertextuality shifts the focus from the work to its cultural context, revealing it as "conservative in both theory and practice" (1985, p.30). Transformation & parody, rejection & reference: these are ultimately processes that elevate the importance of the progenitor work, since they depend upon that work for meaning and context. An isolated work can at least be considered independent of its referents, but not where the connectivity between work and references is as explicit as that found in hypertext. Where the original writer alone is involved in freeform creation, the reader comes to an in-progress work in which centrality, not editorial or personal judgment, determines whether a work is important or not. This is likely to privilege certain works that are viewed as "central" to a particular field.

Referencing Foucault, Landow suggests that by drawing together all of an author's works (including laundry lists and scribbled notes) he may "become a victim of his own writing"

(2006, p.117), any sense of authorial presence drowned in a sea of trivia. This seems to echo Nelson, who similarly argued that “deciding what’s in and out” (1981, 1/18 [sic]) is second only to sequence as the central challenge of creative writing. Immersion in the minutiae of an author’s life, however that material is explored, cannot help but bring that author into sharper focus, almost by definition. Foucault’s original argument seems more a criticism of close reading as a proxy for biography, since whose responsibility is it to identify ‘relevant’ material from ‘irrelevant’ trivia? It must be the critic. Foucault’s argument concerns the selective role of the critic, not a dilution of authorial presence. Being the proverbial paparazzo in the dustbins, foraging for material not sanctioned by the author, may feel transgressive, but still privileges the subject.

Landow’s discussion in *Hypertext* cites a user whose "accidentally clicking" on a particular link led to a “delightful detour”, which Landow does not consider plausible in book technology: “it would be the improbable act of being in the wrong section of the library, the wrong row of books, the wrong shelf, picking up the wrong book, and opening up magically to the correct page" (2006, p.148). What are the criteria for wrong and correct in this scenario? The hyperlink that Landow’s participant followed was authored, just as an entertaining footnote or witty aside might be. If Landow is referring instead to a delightful detour that comes entirely unexpectedly for both author and reader, then this is materially no different to browsing a bookshop or periodical. A bookshop at least has the advantage of being organized first by genre and then alphabetically, a less arbitrary system than that presented by read-only hypertext. What Landow has in mind, however, is a kind of authored playfulness:

> Readers in informational hypertext obviously have far more control over the order in which they read individual passages than do readers of books, and to a large extent the reader's experience also defines the boundaries of the text and even the identity of the author, if one can conveniently speak of such a unitary figure in this kind of dispersed medium. (Landow, 2006, p.358)

To extrapolate from this that “in reducing the autonomy of the text, hypertext reduces the autonomy of the author” seems perverse, particularly since Landow himself concludes “much of that so-called autonomy has been illusory” anyway. Michael Heim argues that “as the authoritativeness of text diminishes, so too does the recognition of the private self of the creator author” (1983, p. 221), but where this authoritativeness is eroded by demonstrating the author’s extraordinary and playful breadth of knowledge their idiosyncratic intellectual schema will come

to the fore. Autonomy cannot be reduced in a system that seeks to clarify more than it does to open up discussion, since this approach underscores the author's intention.

Hypertext systems have been described here as an attempt to make concrete notions that Barthes proposes as theoretical, in doing so testing (to repeat Landow's phrase) the potential of this system. This approach assumes that hypertext does in fact mirror the structure of Barthes' proposed textuality, which the preceding section has argued is by no means clear. Barthes can be taken too literally, especially in pursuit of an argument – the tissue of citations he mentions do not have to become actual citations, since they already exist interculturally and intermedially, without the need to underscore them paratextually. As Kathleen Fitzpatrick (2014, p.75) argues, writing means "entering conversation with the scholars with whom we work, both those whom we have read and those who will read us" – what is gained by making this connection explicit?[9] "The reader's implicit task," hypertext fiction author and scholar Stuart Moulthrop (1994, p.300-301) explains, "is to build a network of virtual connections (which more than one reader of my acquaintance has suggested operationalizing as a web of hypertext links)", while Professor Ilana Snyder (1996, p.69) argues that in hypertext "we organize our writing space in the way we organize our thoughts, and in the way in which we think the world itself must be organized". This kind of reductive influence-in-reverse systematizes thoughtful engagement with written works in a manner that oversimplifies the complex process of making intellectual connections for sake of rhetorical neatness

In the introductory chapter of their collection *Hypermedia and Literary Studies,* Paul Delany and George Landow (1995, p.4-7) argue that hypertext makes visible "explicit mental processes" that have always been a part of reading: "for the text as the reader *imagined it* – as opposed to the physical text objectified in the book – never had to be linear, bounded or fixed... hypertext provides a better model for the mind's ability to re-order the elements of experience by changing the links of association or determination between them." Elsewhere, John Slatin (1995, p.161) describes hypertext as embodying "the perception of relatedness" that is the defining characteristic of intelligent behaviour, while Nelson (1993, p.16) describes writing as "representation and the presentation of thought". All writing, however, is a representation, since thought itself cannot be transcribed. Hypertext is not a model *for* thought, but a model *of* thought; it is a simplified metaphor for neural connectivity, not an encompassing epistemic

[9] Didactically, of course, this makes perfect sense, but this would be to acknowledge the reader's relative passivity (see Section 4.3.2)

methodology. Experience is linear, knowledge a network, and the pretense that hypertext networks model neural networks in a useful manner is frustrating, since it places the brain on the wrong side of the reading act. We do not need our holidays presented as a synaptic diagram, since it is the brain that will structure that knowledge and such a restrictive system only simplifies complex relationships.

The effect of concretizing a previously intellectual connection is to underscore and privilege the underpinning structure. Landow is not wrong – there is some overlap in the projects of both continental literary theorists and hypertext theory *as it relates to the networked, user-editable system*. In the conventional hypertext systems favoured by authors of hypertext fiction, the reader can jump in at any point and read in any order *permitted by both the system and the writer.* Previous scholars (Delaney & Landow, 1995; Kendall and Rety, 2000) have, however, given the impression of a continuum between linear print and networked, user-editable hypertext, with stand-alone, read-only hypertext positioned as approaching but not quite reaching networked, user-editable hypertext's full potential. Even Mark Poster, who is less convinced by hypertext's claim to provide Foucault's "post-author utopia", believes it to undermine the author in a meaningful way (2001, p.69). This oversimplification ignores that these are three distinct media with distinct and contradictory characteristics.

Should hypertext be compared to the linear printed work at all? This is a fair question. Liestøl (1994, p.99) complained that his fellow critics were "imputed to unfairly equate hypertext with the printed book" when they were simply seeking to apply existing literary theories to a new medium; Landow (2006, p.359) similarly believed networked hypertext had "no analogy in the world of print technology". Scholar of rhetoric Richard Lanham (1993, p.8) still contrasts hypertext with the "authoritative and unchangeable, transparent and unselfconscious" book, however, while Landow criticises academic J. Hillis Miller for confusing the effects of "read-only and read-and-write systems" (2006, p.14) but nonetheless positions stand-alone, read-only hypertext systems in the same passage as part of a continuum that runs from networked, user-editable hypertext to the linear printed works. Stand-alone, read-only hypertext, in this formulation, becomes an admittedly *lesser* form of hypertext, but nonetheless one that fulfils the ambitions of antiauthorism, to the satisfaction of some critics.

Such theories also misrepresent linear print. Fixed, static, stable: these descriptors will arise again and again in descriptions of the linear print novel and its affordances, a framing required to dramatise literary hypertext fiction's own perceived capabilities. There may be no

tangible means to link blocks of text to others “over which one does not possess the right to make verbal or other changes” in linear print (Delaney and Landow, 1995, p.30), but the logic of referencing and citation embodies the spirit of this idea, if not its unique textual implementation. To suggest that the material textuality of hypertext embodies this idea is to imply that linear print does not, as in Davida Charney’s argument (1994, p.238) that most people understand linear print text as being a tool for “influencing a reader’s knowledge, attitudes, or actions”, or Jane Yellowlees Douglas’ description of traditional linear print as offering “singular, determinate meanings” (2009, p.84). This artificial counterpointing of linear print with hypertext’s perceived strengths is also found in Kendall & Rety’s argument that subplots in a linear print work “maintain an individual identity for the reader” (2000, p.164). After all, subplots in linear print fiction will often interact, overlapping thematically or through character. Kendall & Rety’s aim here is not to discuss linear print’s affordances, of course, but to set up a rhetorical straw man that allows the fragmentary effect of multilinear hypertext fiction (and consequent interrelating of narrative subplots) to be valorized. These are arguments that misrepresent linear print fiction to benefit a particular point of view. Landow (2006, p.85) argued that the cursor provides “a moving intrusive image of the reader’s presence in the text,” concluding that the cursor adds “reader presence” to the page. He contrasts this presence with the book, in which a reader can “move one’s finger or pencil across the printed page, but one’s intrusion always remains physically separate from the text”. The artificial and temporal nature of the cursor, however, seems far less persistent than the marks made by pencils and biros, which adhere to the page permanently. In the same section, Landow himself cites a narrow range of different appearances the cursor may take, concluding that this makes the cursor feel more a part of the screen, but it simply means the cursor’s functions are the preserve of the system designer.

Stand-alone, read-only hypertext is not the midpoint on the continuum between linear print and networked, user-editable hypertext systems. It is a distinct medium with specific affordances that, while sharing superficial metaphorical similarities with Barthes’ anti-authorism, in fact undermines its philosophical ambitions. In the forthcoming chapters this thesis will argue that stand-alone, read-only hypertext systems in fact favour the author to a greater extent even than linear print, albeit in a different way. The democratic nature of hypertext is contingent on the mode of writing that it adopts, and stand-alone, read-only hypertext reduces the quality of liberty experienced by the reader.

What of the other two possibilities: the stand-alone, user-editable and networked, read-only hypertext system? As already argued, only networked, user-editable hypertext systems can accommodate the aspirations of both continental theorists and west coast cyberutopians. Stand-alone, user-editable hypertext systems might partially fulfils the requirements of Engelbart and Nelson (since their focus is primarily on parity between users) but it cannot satisfy the Continental theorists, since it does not explicitely allow for references outside the existing work, thereby favouring evidence within its textual structure. The reverse is true of networked, read-only hypertext, which literalises the core demands of Barthes' ideal text, but resists the collaboration that Nelson and Engelbart favour; I would also suggest that it does not embody the *spirit* of Barthes' argument.

Stand-alone, read-only hypertext systems, however, most egregiously fail to accommodate these principles and approaches. "Readers of individually read hypertexts", Ensslin rightly notes, "do not have the alleged liberty to author – either materially or metaphorically – their own stories" (2007, p.33). The isolation, the limitation that stand-alone, read-only hypertext imposes makes its relationship with liberty for the reader highly troubling, not least because (as we will see) the majority of hypertext fiction's corpus resided and continues to reside in stand-alone, read-only hypertext systems.

The preceding sections concluded stand-alone, read-only hypertext's reliance on the hyperlink to legitimise the convergence argument is insufficient, even before questioning the framing of the argument itself. The next section will consider how authors of stand-alone, read-only hypertext fiction sought to retrofit a pedagogic tool designed to privilege the authorial presence into something that favoured the reader.

2.3 The Convergence Argument: Hypertext Fiction

Section 1.3.5 foregrounded Janet Murray's definition of hypertext fiction: "more than one entry point, many internal branches, and no clear ending" (1997, p.56). Two things should be noted: firstly, that this description echoes the same Barthesian ideal text identified in the previous two sections; secondly, that this is a quintessential definition of stand-alone, read-only hypertext. No reference is made to collaboration, connectivity to wider networks, or the ability to edit the work-in-progress (a feature considered essential by hypertext theorists; see Section 4.3). Landow himself notes that there were at the time of writing a vanishingly small number of hypertext works both informational (1994, p.107) and fictional (2003, p.222) not in the stand-alone, read-

only mode. Today, two decades after these questions were initially broached, most people would assume that all hypertext systems are networked by definition, and the dominant paradigm also leans towards offering editing privileges by default. In the field of hypertext fiction, however, the stand-alone, read-only hypertext was the dominant mode. As such, hypertext fiction relied on the same justification for its status as an ideal text that stand-alone, read-only hypertext does generally. Its adaptation for literary purposes, however, introduces a number of additional complexities that undermine any notion that stand-alone, read-only hypertext fiction can be considered a model of Barthes' ideal text.

Stand-alone, read-only hypertext systems, the previous section argued, consist "not of adding new texts but of establishing an order of reading in an already-written set of texts" (Landow, 2006, p.9), an affordance which is seen by some theorists as akin to reconfiguring the original work. This is important to remember, as it is upon this foundation that conventional hypertext fiction's claim to anti-authorism rests. The subversive reader is considered to be uncovering a hitherto unknown configuration of the author's work, in doing so undermining authorial attempts to establish a single meaning:

> A hypertext has no canonical order. Every path defines an equally convincing and appropriate reading, and in that simple fact the reader's relationship to the text changes radically. A text as a network has no univocal sense; it is a multiplicity without the imposition of a principle of domination. (Delany & Landow, 1994, p. 112).

If we step away from this passage as a statement of readerly empowerment, it becomes a sinister description of a maze. All paths are equally convincing, with no clear indication of which way to go; there is no suggestion of order. This is an illusion, however; this absence of a canonical order is a claim that does not bear scrutiny (see Section 5.1). Stand-alone, read-only hypertext fiction still increases individual freedom, Landow argues, because "users are entirely free to follow links wherever they please" (2006, p. 273), earlier describing the process of reading hypertext branches thus: the reader chooses one path or another… then repeats this process until she or he finds a hole or a gap" (p.231). This does not reflect the experience of reading conventional hypertext fiction, which does not so much create weaknesses in the work as it does reinforce authorial presence. We are not undermining walls, but exploring mazes. In the previous section Landow suggested that stand-alone, read-only hypertext for informational purposes offers editorially approved connections that help to reinforce the logic of an argument. How successfully can literary hypertext fiction not simply *neutralize*, but *reverse* this author-privileging mode, thereby validating its claim to be decentering of authorial power?

Landow (2006, p.9) offers one method for counteracting the intrusive author found in stand-alone, read-only informational hypertext systems: making hyperlinks intentionally opaque. In this way, the effectiveness of hyperlinks for building an argument becomes undermined. This approach, however, simultaneously removes the sense of agency that underpins choice, since the reader's capacity to predict where the link will take them is removed (see Section 5.3). If the goal is to occlude editorially-legitimised links by making the destinations consciously opaque, then we create an environment in which choices have unpredictable (and therefore meaningless) consequences. Landow's solution to this is a compromise: "The best hyperfictions, I submit, permit the reader to deduce enough basic information, sometimes, as in Michael Joyce's *afternoon*, by retracing their steps, to make informed (thus creative) decisions when they arrive at links." Their choices may start as unmotivated, but through repetition readers return to these choices better informed. Informed, however, has the literal definition of "to give form or shape" – the reader is being formed by the author, pursuing their perceived meaning, their essential truth, through repeated passes of the same textual material.

Section 1.3.3 identified Richard Holton's passing description of choice as a theological test, and it is this mode of choice that literary hypertext fiction offers. We pursue a hyperlink, anticipating certain possibilities but finding our understanding is objectively incorrect in the eyes of the author; further investigation improves our understanding, until finally we are able to make "informed decisions" that allow us to pursue the narrative to our (and the author's) satisfaction. From whom are we deriving this theological meaning? It is Barthes' "author-god" (1967), the precise figure his essay was written to undermine. Arguing that the functions of reader and writer become "deeply entwined" with each other in literary hypertext fiction, Landow (2006, p.125) continues that hypertext creates "an active, even intrusive reader" who infringes upon the power of the writer, "robbing some of it and granting it to the reader". This thesis will argue that conventional hypertext fiction created an active, even intrusive *writer*, who haunted the hypertext document precisely through the manner of choice they offer, and without the ameliorating qualities of a networked or user-editable system.

That conventional hyperlinks are the problematic creation of an author alone does not go unnoticed by all critics. In a rather neat turn of phrase, Aarseth (1994, p.70) noted that the version of *afternoon* he encountered "was (in more than one sense) not the same as the one discussed by Stuart Moulthrop, J. David Bolter, and Landow". Aarseth intends this not in the sense of a unique path through the material, but that the material affordances of the system as

presented to him were different to those claimed by other scholars. His version of *afternoon* did not allow users to create their own links or to view the hypotext (overarching view) of the work, a claim repeated in his notable work *Cybertext* (2001, p.77). This limited format leads to the same dubious reliance on the authorial hyperlink as a tool for liberation from the author identified earlier. Describing this as "one of the most disturbing aspects of Aarseth's critique," Landow dedicates much of *Hypertext* third edition's revised final chapter to a furious rebuttal, rightly arguing that this is in fact an existing affordance of the *Storyspace* system. This is to miss the point of Aarseth's criticism – not that such a system is *unavailable* to authors, but that there were and are a vanishingly small number of literary hypertext fiction works that take *advantage* of these features. The question here is not whether you *could* instead write a networked, user-editable hypertext fiction, but whether the favored form of what we have called stand-alone, read-only hypertext systems can be argued to fulfill the tenets of the anti-authorist argument.

This resistance to a spatial approach to hypermedia, to the revelation of the structure of the hypertextual web, can be found elsewhere in Landow's book. Initially describing spatial hypertext in terms of computationally generated hyperlinks (see p.125 for more on hyperlinks themselves as bearing intrinsic meaning), Landow goes on to argue that closer examination of arguments around spatial hypertext suggest it refers to something rather different. Quoting Catherine Marshall and Frank Shipman's who argue that spatial hypertext "has its origins in browser-based approaches in which the emerging hypertext network is portrayed graphically" (1995, p.89), Landow argues that this description "makes [him] suspect that what they term *spatial hypertext* has little to do with hypertext or hypermedia" (2006, p.28). His primary evidence for this this derives from Marshall and Shipman's description of spatial hypertext as "helping keep complexity tractable" (p.93) for both readers and writers. In context it is clear that only the reader's access to this spatial view represents a significant crisis for his understanding of hypertext; the author in *Storyspace* etc. is permitted full access to this view.

Liestøl (1994, p.109) uses the metaphor of the Tarot deck to suggest a system that claims "infinite variety", equating this to a reader navigating static and discrete lexia, which generates infinite possible meanings. It would be possible to criticise this on the basis that it presumes a reader with the capacity to range between *all* lexia, rather than navigating a labyrinth devised by the author. It is more interesting, however, to look at the metaphor in more detail. Tarot cards are intended to be read as a spread – they are set out in a known

configuration, turned over, and only then does the process of interpretation begin. While the Tarot deck offers an enormous range of possible combinations, their interpretation relies on a finite and revealed structure. This pattern of revealed signifiers also carry the weight of an interpreter. It is only on completion that the spread is understood.

Reading as oppositional (i.e. a conflict between reader and author) is a post-structuralist notion legitimized by Bolter (1991, p.154), who argues that the reader "may well become the author's adversary", the reader seeking to "take the text in a direction the author did not anticipate." Bolter sees the computer as the main site of this conflict, in which case we should recognize the enormous technical advantage that the author has over the reader in stand-alone, read-only hypertext systems. When Aarseth calls literary hypertext "computer-mediated textuality" (1994, p.71) we imagine a mediator in the sense of a neutral party. The disproporptionate power of the author makes such a system the biased exponent of the author's ideas (see Chapter 5).

Robert Coover draws together the argument in favour of stand-alone, read-only hypertext fiction in a much-referenced 1992 article:

> No fixed centers, for starters - and no edges either, no ends or boundaries. The ... line vanishes into a geographical landscape or exitless maze, with beginnings, middles, ends being no longer part of the immediate display. … There are no hierarchies in these topless (and bottomless) networks [of] evenly empowered and equally ephemeral window-sized blocks of text and graphics. (p.23)

Stand-alone, read-only hypertext systems have boundaries and ends, but Coover is at least right on one count: this is a maze into which readers step only hesitantly, making choices without certainty. The hierarchies may not be explicit but they are there, in the central lexia and distorting maze of the stand-alone hypertext system, and with no means to create connections themselves the reader must pursue this labyrinth wherever it leads, its ostensible complexity and multilinearity masks a single way out – pursuing the author's meaning.

2.4 Conclusion

First wave criticism framed hypertext fiction as the nexus of two independent but chronologically parallel traditions: poststructuralist literary and hypertext theories. Equating hypertext's fragmentary structure with self-conscious modernist and postmodernist works in the poststructuralist tradition, theorists positioned this new medium as challenging of traditional power structures in writing. The decentering nature of the stand-alone, read-only hypertext system leads Jay Bolter (2001, p.86) to conclude that the reader "loses track of where they end

and the writer begins", for example, a correspondence that subsequent waves of criticism have failed to fully undermine (see Chapter 1). Literary theorist Myron Tuman mentioned in 1992 that the author is present both whilst writing the work and "through manipulation of the software controlling the degree of 'freedom' the reader experiences" (p.76), an argument which has been adopted by the various new and emerging fields that have made digital textuality their subject. Critical Code Studies (which focuses on the cultural significance of computer code rather than explicitly its functionality) was initiated in 2006 by new media scholar Professor Mark Marino, in a paper that placed great emphasis on Foucauldian ideas of authorship:

> The history of the program, the author, the programming language, the genre, the funding source for the research and development (be it military, industrial, entertainment, or other), all shape meaning (Marino, 2006).

In a follow-up paper, Marino re-emphasises the importance of authorship and authorial intent, making it first amongst the priorities for this new discipline (2010), and the importance of authorship remains a "fundamental concern" for theorists in these emerging disciplines (Berry, 2013).

In keeping with this emphasis on authorship, this chapter outlined the anti-authorist view, introducing some weaknesses in the merger of hypertext scholarship and poststructuralist literary theory. Stand-alone, read-only hypertext will in forthcoming chapters be shown as agnostic to the philosophy of anti-authorism, if not actively working against it.

In an essay describing a future for hypertext fiction, James Pope (2006, p. 449) suggests that debate has polarized into those who consider it the fulfilment of poststructural literary theory and practice (in which he includes Landow, Bolter *et al.*) and those who consider it a literary experiment "doomed to failure" by its perplexing and distressing structure. There are some who would argue that it is both; this thesis argues that it is precisely those qualities that most define stand-alone, read-only hypertext fiction as a form that undermine its potential to fulfil the promise of poststructuralist literary theory. Stand-alone, read-only literary hypertext fiction has been framed as the middle ground between the full hypertext experience represented by networked user-editable systems, and the monodirectional experience of reading linear print fiction. This relies upon a certain view of the agency continuum: *stand-alone, read-only* hypertext fiction may not offer the same liberation from the author that *networked user-editable* systems do, but it is still positioned as superior to the perceived limitations of the linear printed work. This implicit continuum raises the question of whether a nuclear definition is intended to

be inclusive (seeking to accommodate all divergent forms) or exclusive (seeking to be specific). The various flavours of hypertext in fact represent significantly different phenomenological and epistemological propositions, despite operating beneath the same broad intellectual umbrella.

Aarseth (1994, p.84) suggests two tactics for the incorporation of hypertext into literary studies: existing theories may be used to "grasp and focus the new material" or new material can be used to "re-evaluate and modify the old perspectives". To that end, the following two chapters dissect the twin strands that converge in literary hypertext fiction, to identify how each perceived their relationship to authority. We begin with literary theory itself, and in particular the nature and role of the author.

Chapter 3 Literature, Authority, Freedom

This chapter explores the first major influence on the convergence argument: literary theory, specifically in the context of literary authority. Complex historical strands are drawn together in a significant moment of the 1960s, when Roland Barthes offered a different strategy for reading the relationship between reader, author, and text. To explain fully this moment in literary history, it is first necessary to establish the bogyman of poststructuralist literary theory: the author.

Section One offers a brief summary of meaning and authority, as seen historically by literary theorists. It seeks first to establish the ancient view of nature or the Divine as the source of authorial inspiration, before moving to the Enlightenment's privileging of the individual and consequent reliance on authorial biography (and critical consensus) to establish the canonical meaning for a work. The centrality of the author is challenged in several ways by poststructuralist literary theory in the mid-twentieth century, which sought to establish the literary work as a product of its cultural context, seeing interpretation as the domain of the individual reader.

The corpus of theorists referenced amongst first wave scholars of hypertext fiction is relatively narrow. Various critics (Hix, 1990; Paglia, 1990; Burke, 1998; Golomb & Wistrich, 2002) have in one way or another questioned the framing of the relationship between author and reader found in 1960s Poststructuralist literary theory, but the purpose of this thesis is to consider the application of Continental literary theory to hypertext fiction, rather than directly critique the progenitor theory itself.

Having outlined a history of meaning and authority as it relates predominantly to linear print, Section Two provides a brief history of proto-hypertextual literature, those works that are commonly referenced in histories of literary hypertext fiction. It will argue that the concerns identified in Chapter 2 regarding the relationship between hypertextuality and the freedom of the reader are already present in these proto-hypertextual print works, highlighting that it is not necessarily the technology which undermines the hypertext metaphor's relationship to anti-authorism.

3.1 Meaning and Authority in Literary Theory

Literary theorist Bo Eklund suggests "literary authority, like any other form of authority, exists only when it is recognized" (2008, p.89). An author may assert that everybody loves Roland Barthes, for example, but the reader is not required to concur. Interpretation is the preserve of

the reader. By the same definition, a critic may *offer* an interpretation of an author's work, but the reader is not required to accept it. For example, were a reader to prefer Slavoj Žižek's Lacanian interpretation of Neil Jordan's *The Crying Game* to the diametrically opposed version offered by Eklund, they (the reader) would be making an explicit choice about which interpretation they most endorsed. In choosing to side with Eklund or Žižek, the reader chooses in whom they place trust, and thereby whom they considers to be an authority on an aspect of the work; they are, of course, also free to reject - or acknowledge value in - both scholarly interpretations.

Like reading, this relationship evolves in real time; were Eklund to reveal at the end of his essay that his knowledge of Jordan's *oeuvre* was derived from Wikipedia, for example, his claim to authority – one stemming from knowledge – would likely be undermined in the eyes of the reader. The reader is free to engage with the work on their own terms, informed (to a greater or lesser extent) by the author's work, and any critics whom they may choose to read.

The source of meaning is seen by some critics as going through three distinct historical phases: the Ancient phase, with a divine or mimetic source; the Enlightenment phase, with a primarily authorial source supported by critical judgement (itself decisively critiqued by cultural theorist Roland Barthes in the 1960s); and the Post-Structuralist phase, with meaning derived from the reader. In this framing, ancient authors are primarily seen as channels for either religious or literary/natural inspiration (Barthes, 1993, p.142; Burke, 1995, p.6), though the craft of writing remained a mortal endeavour. This prevailing attitude persists during the western medieval period when, despite the efforts of some critics (Bein, 1999; Baisch, 2006) to accommodate modern ideas of authorship, it is accepted that "only authorities acknowledged by the church had the right to be mentioned as authors" (Heibach, 2000). The argument might be made that it was earthly representatives who made this judgment, though their authority was still derived from ostensibly divine origins. St. Bonaventura, a 13th century Franciscan, is typical of his peers in suggesting that a writer makes books "as a cobbler makes shoes in a last" (Burrow, 1976), and his 12th century Brother Nicholas of Lyra is at pains to remind readers that "I do not intend to assert or determine anything that has not been manifestly determined by Sacred Scripture or by the authority of the Church" (1998, p.30).

This framing does not negate the secular storyteller. A scribe's wage represented two-thirds of the cost of a manuscript (Booton, 2010, p.23) while print historian Elizabeth Eisenstein suggests that while scribes were valued, "it was the medieval minstrel or bard who was most

highly regarded" (2011, p.164). Whether singing in a tavern or at work in a scriptorium, the storyteller was praised for their artisanal craft. Consensus among these critics agrees that the meaning of their stories still derived from natural and/or supernatural sources.

The Enlightenment is identified by various critics (Barthes, 1993; Booth, 1983, p.71; Docherty, 1987, p.13) as the point at which the author-figure (from whom meaning was derived) becomes intertwined with "the actual historical agent causally and legally responsible for the text" (Nehamas, 1986). The explanations for this shift are varied. Some of these critics attribute it to a humanist obsession with the individual, noting the focus on the latter seen in 18th century biographical works by Samuel Johnson and James Boswell. Citing industrial capitalism and Protestantism, for example, Ian Watt (1957, p.62) notes "it is generally agreed that modern society is uniquely individualist", going on to suggest this may account for the concomitant rise of the novel. Others, meanwhile, cite the inauguration of the printing press, which allowed the mass production and dissemination of written work. Referencing the novel as the "earliest indication" of oral storytelling's demise, Walter Benjamin (1999, p.146) notes that the former is in part defined by its "essential dependence on the book".

Whatever the material or sociological cause, the author-figure becomes the source of meaning, albeit sometimes inspired by the Divine or mimetic. Wordsworth may have been motivated by daffodils, but if he informed a contemporary reader that the daffodils instead represented passion, faith, or some other metaphoric concept, it is suggested that his interpretation would carry disproportionate weight with the reader. Note that this framing of reading still sees the reader's interpretation as secondary; meaning has moved from being divinely or mimetically inspired, to being the preserve of the author, with the reader still a close second. Interestingly, Wordsworth does in fact defer to the authority of another: his description is drawn almost verbatim from his sister's diaries. It is nonetheless common to refer to the poem as his work, however, and to place within his domain the right of interpretation; the act of writing becomes a statement of authorship. The novel is both the "greatest manifestation" of modern literature, and "the form of literature which most fully reflects the individualist and innovating reorientation" of modernity (Watt, 1957, p.13). When a 17th century reader sat down to read a book they were considered to be seeking the author's intention, rather than that of their supernatural muse.

Liberal humanist critics of the early 20th century like F.R. Leavis largely validated and perpetuated this framing in literary criticism until the mid 20th century when Roland Barthes,

frustrated by French criticism's obsessive reliance on an author's background to define meaning, began to question this relationship. "We know that a text does not consist of a … single 'theological' meaning (the 'message' of the Author-God)," he wrote. "The text is a tissue of citations, resulting from the thousand sources of culture" (Barthes, 1993, p.148). The informed critic might argue that *Hamlet's* religious imagery suggests latent Protestant leanings, using Shakespeare's biography to legitimise their reading, and to quash that of others. "This is what Shakespeare intended" is considered a dangerous statement, however; the contents of a work may be inspired by any number of sources, lending itself to any number of interpretations. If nobody laughs at the Gravedigger scene, is it objectively funny or subjectively unfunny? Barthes rightly suggests the latter. If a reader chooses to consider a scene flat or uninteresting, then that is their prerogative. We may weep with laughter or sigh with despair at Polonius' monologue about theatrical genre, but neither response is incorrect.

Readers throughout history would have recognised this right to different responses – Louisa May Allcott's *Little Women* describes an in-fiction fan club, printing its own version of the Pickwick Papers, for example - and it is primarily within scholarly or critical circles that there has existed a concern about privileged interpretations and their irresistible power. The peculiar approach would be to presume that Shakespeare's own intentions were all that mattered, and that we should defer to the authority of this long-dead playwright or one of his informed critical acolytes on such matters. Writing some two decades after Barthes, philosopher Alexander Nehamas (1986) describes such an approach as being "to ask… a certain type of question and to expect a certain type of answer". The reader must be reminded of their power. Barthes (1974, p.4) seeks to make the reader "no longer a consumer, but a producer of the text" – the author must "die" to remind readers it is their reading that gives the work life.

In keeping with its being a play (in French) on Malory's *Le Mort d' Arthur,* in which an idea as much as a man perishes, Barthes' use of death in this context should be understood symbolically, as it is in areas such as tarot reading. God has suffered many such metaphorical deaths, mourned by such diverse figures as Nietzsche, Hegel, and Richard Rubenstein. In each case there was a belief that a threshold had been crossed beyond which God could not survive. For Nietzsche, it was the irrevocable breakdown of a belief in order; for Hegel, it is a spiritual absence which must be mourned before His return; for Rubenstein, it is the realisation that God cannot survive the holocaust (1966, p.172). Each asked, like Barthes: "What should we do next?" Perhaps Barthes had in his mind Nietzsche's line from *Thus Spake Zarathustra* - "Dead

are all the gods: now do we desire the overman to live" (1995) - when he made authorial death a requirement for the reader's birth. A symbolic death, then, heralded by nothing more than a change in perspective, complete in itself and requiring no medium to validate it. Recognising that the author (and critic's) primacy is no longer tenable is the goal.

Barthes is heralding the necessary death of a point of view, then, rather than anything more literal. No longer seeking the author's intention did not require the author to disappear entirely, since "no reading can fail to generate an author" (Nehamas, 1986) - however you understand this term. Writing during the same period at Barthes and developing his ideas, philosopher and critic Michel Foucault pleads a stay of execution, suggesting that authors be moved from a judicial entity to being merely a word ("Shakespeare", for example) that is the "equivalent of one, or a series, of definite descriptions" (Foucault, 1977). We may describe Dickens as particularly fecund, the product of the workhouse, a tireless showman, or any one of a million other descriptors, but the significance of these elements is ours to determine (or ignore). Readers need not be dogmatic in their rejection of the author; they may choose to utilise biography in the process of interpretation if they wish, emerging with a fresh reading of the work. Barthes' concern was that readers should not privilege a critic's interpretation just because of their more extensive knowledge of the author's biography or cultural context. Walter Ong (2013, p.78) negatively compares the book to an oracle, relaying an "utterance from a source" that cannot be reached or refuted. This distance, however, is what I believe Barthes (1967, p.53) most valued: "Once the Author is found, the text is 'explained', the critic has won". Instead the Oracle might be seen as the Pythia, or the *Kuten* of Tibetan Buddhism – a medium, not a source, for ideas they may not fully understand themselves. An absentee author-god permits ambiguity and uncertainty, the author refusing to be placed in a juridical position by the reader.

In a widely reprinted 1964 essay, Susan Sontag raises similar concerns to those expressed by Barthes, though with a rather different focus. We cannot return, she says, to the time before theory, when "one did not ask of a work of art what it said because one knew (or thought one knew) what it did" (p.4). Instead we are left with *interpretation*, in which the interpreter (who here is arguably synonymous with Barthes' critic) offers to translate the meaning of a work: "The interpreter says, Look, don't you see that X is really— or, really means—A? That Y is really B? That Z is really C?" (p.5). This modern style of interpretation, she argues, "digs 'behind' the text, to find a sub-text which is the true one" (p.6), and in doing so

"violates art" (p.10). Is there virtue in having a critic explain the supposed subtext of an otherwise allusive, unknowable work? To suggest that the work of art is composed of mere content to be derived is to make it "an article for use, for arrangement into a mental scheme of categories", ascribing concrete meanings to creative constructs. The Oscar Wilde quote which opens Sontag's essay summarises this feeling neatly: "the mystery of the world is the visible, not the invisible" (p.1). We should not pursue additional, hidden content, but engage with the experience of reading the work itself. "In place of a hermeneutics" Sontag concludes, "we need an erotics of art" (p.14). We should not see reading as a search for answers to questions posed by the author, but a chance to engage sensually (and personally) with the work at hand.

Perhaps fearing a future return to old habits, Foucault joins Barthes in cautioning against mistakenly turning back to the author as "an indefinite source of significations" (1977). Knowing that Dickens had ten children or a teenage mistress may prejudice more conservative readers against his work, for example, leading them to read it differently. Foucault's idealistic dream of a free-floating discourse (in which the writer disappears) is unrealistic, and in my view, potentially dangerous. Literary theorist Seán Burke (1998, p.1) rightly points to famed literary critic Paul de Man, who in his youth wrote 170 anti-Semitic and pro-Nazi articles for collaborationist Belgian newspaper *Le Soir*.[10] A reader has every right to allow this detail to shape their interpretation, just as Burke allows it to shape his.

Such criticisms do not affect the central premise that ownership of meaning should be wrested from the hands of the author, leaving the work to be "defined independently of its relation to an actual author (or *author-as-person*)" (LaMarque, 1966, p.172-3). We should no longer be relentlessly pursuing the author's intention, engaging in what mid-20th Century literary theory movement New Criticism called the *intentional fallacy*.

Expressing similar ideas a decade before Barthes' own essay, New Criticism's intentional fallacy held that the author's intention was neither "available nor desired" in judging the "success" of a work of art (Wimsatt & Beardsley, 1954). Instead, the pursuit of meaning should be approached scientifically - via close reading. It should be noted that the reader is equally unwelcome in this framework, with the use of emotional response to a work equivalently labelled the *affective fallacy*. This rejection of both reader and author became a defining feature of New Criticism, though literary critic and professor Cleanth Brooks (1979) did very belatedly

[10] I myself was put out to discover that cartoonist Hergé worked for the same publication.

admit "no-one in his right mind could forget the reader". It is a resistance to the privileging of any subjective interpretation that is paramount, with Brooks going on to warn us that "putting meaning and valuation of a literary work at the mercy of any and every individual [reader] would reduce the study of literature to reader psychology and to the history of taste". This anxiety brings to mind the 1887 keynote speech of Professor Edward Freeman, who cautioned against the academic study of literature in general on the grounds that "we cannot examine tastes and sympathies" (quot. Barry, 1995, p.14), and Jeremy Hawthorn positioning the author as the "guard against the generation of successions of false and frivolous interpretations" (2008, p.66) - presumably with the critic to act as interpretative gatekeeper.

Barthes, it is worth noting, was equally disinterested in the specifics of the reader figure, whom he describes as "simply that *someone* who holds together in a single field all the traces by which the written text is constituted" (1993, p.148). The reader generates an interpretation, one as unique and subjective as that of the author or critic. What would be the value of studying this particular interpretation? The final line of his essay - "the birth of the reader must be ransomed by the death of the Author" – certainly gives no indication of what the orphaned and newly empowered reader might do (or become) in the absence of the authorial father figure.

So far these critics have generally been concerned with the power struggle between readers and authors. But what is the motivation for this transaction? What causes it to occur in the first place? In the case of reference works (an encyclopaedia or dictionary), it is generally the transmission of knowledge from one source to another, in as objective a fashion as possible. Evaluating literature on the same basis, however, is an approach decisively critiqued by previous researchers (Kivy, 1997, p.122; Lamarque and Olsen, 1994, p.1). Clearly it is possible to find the experience of reading valuable, even if the reader does not agree with the politics (as in the case of Herge's *Tintin in the Congo*, say) or if there is no obvious educational benefit (as in the case of much genre fiction). Alternate suggestions are more varied. Some early theorists (Richards, 1924; James, 1934) argued that narrative helps us understand our lives; others saw it as an emotional or aesthetic experience (Barthes, 1980; Brooks, 1984; Miall and Kuiken, 1994; Nell, 1988; Turner, 1996). Clearly there are a range of literary affordances, and an adequate survey of this material would be beyond the scope of this study. Not all modes of literary writing are well represented in hypertext fiction, however, and those works which have received extensive critical attention tend to fall into a particular mode: the modernist literary work, which offers readers a very specific kind of experience.

How should we approach the reading of a modernist literary work? For this, we may turn to German literary scholar Wolfgang Iser's definition of literary reading. "Instead of reproducing the system [society] to which it refers," Iser argues, the modernist literary work "almost invariably tends to take as its dominant 'meaning' those possibilities that have been neutralized or negated by that system" (1978, p.72). In other words, the modernist literary work's function is to help readers see the deficiencies in social and other systems from which the narrative is drawn. This in turn encourages us to see literature as a way to focus on the 'other side' of dominant cultural narratives. Iser acknowledges that this is not always the case, citing "rhetorical, didactic and propagandist" works which serve only to reassure the "thought systems already familiar to readers" (p.77). Focus in hypertext fiction scholarship has historically rested on such modernist experimental works (see Chapter 1)

Iser's understanding of modernist literature is familiar from Russian structuralist Viktor Shlovsky's principle of *defamiliarisation,* which suggests that the purpose of literature is to make us reassess (or revisit) the commonplace (1998, p.787). This was itself an attempt to persuade contemporary Russian playwrights not to seek ever more outlandish ways to surprise their audiences, but to take everyday experience and find a unique way to articulate it. This idea is also present in the philosophy of the Bloomsbury Group, writing about the working class experience they felt was not represented in literature. Literature should have what literary theorist Monroe Beardsley (1958, p.184) calls "an essential and unavoidable reference to, and concern with, reality", considering how accurate is our understanding of that reality. Again, this is a vast and complex area, whose history would necessitate extensive additional context, but it is hopefully sufficient to say that literature can sometimes be seen as providing an alternative to perceived commonsensical or "universal" values.

The author is still responsible for this message, however. The characters are theirs, even those that are internally contradictory or objectionable. It is the reader who is encouraged to "abandon the position ascribed to him, so that he [can] then absorb the narrator's viewpoint" (Iser, 1978, p.204). Techniques to achieve this may include the privileging of the narrator's sense experience in the use of description, more sympathetic language adopted by the writer for specific characters, and so on. By encouraging the reader to perceive reality through the eyes of the narrator (and by extension the author), literature encourages the reader to encounter new situations or to perceive known situations in a new way. In reading *David*

Copperfield I am being encouraged to see Victorian poverty from the perspective of Dickens, for example, certainly no less valuable a perspective for being subjective.

Modernist literary works do not generally present information objectively, but offer multiple subjective interpretations. As Hawthorn rightly argues, "literary works cannot be 'corrected' by reference to collective authority" (2008, p.76), since disagreement with collective authority and accepted metanarratives seems to be the purpose of modernist literature. This does not mean the reader is forced to adopt this viewpoint. An implicit assumption of both Iser's critique and the anti-authorist arguments of Barthes and Foucault seems to be that all perspectives are equally valid. Crucially, the ambition has changed: rather than a search for authorial intent, each reading is positioned as a unique process of interpretation undertaken by the reader. Authors cease to be at the centre of critical enquiry, with poststruturalist critics like Jacques Derrida, Barthes, and Foucault seeking to dismantle our search for an essential truth at the heart of a work. Their goal was "the stated abandonment of all reference to a center" (Derrida, 1978, p.286), the acceptance that there was no core set of universal values that could be unearthed through careful reading. Barbara Johnson (1980, p.5) notes that "deconstruction" is much closer to the original etymological meaning of the word "analysis" - *to undo* - than that found in schools of literary analysis which favour the author, such as close reading. Deconstruction seeks to demolish the superficially impregnable fortress of the written work, revealing its failings and weaknesses.

Outside the academe, however, readers can be forgiven for still believing that they are seeking authorial intent as they follow an unfolding argument or narrative. Can both perspectives be brought together? Writing in response to both Barthes' *Death of the Author* and the dogmatic anti-humanism of New Criticism, Iser attempts the separation of authorial intent and individual interpretation by the reader into two equally valid polarities, which he calls the *artistic* and the *aesthetic* (1974, p.274). This permits co-existence of both perspectives, since the author's intention is merely their point of view.

Iser's distinction recalls American literary critic Eric Hirsch (1967, p.8), who separated *meaning* ("what the author meant by his use of a particular sign sequence") from *significance* ("a relationship between that meaning and a person"). Unlike Iser, however, Hirsch does not see meaning and significance as equally valid. Perhaps more conservative in his view, Hirsch positions the author's meaning as objectively correct (since they wrote the work in the first place), with readers offering subjective responses that, while novel, can be considered

demonstrably right or wrong. While the value of the reader's interpretation warrants discussion, that this interpretation may vary from that intended by an author is the position we are unpacking.

To understand this idea, we may visualise the writer entering a room and placing before the reader their work. This work represents "intersubjectively verifiable instructions for meaning-production" (Iser, 1978, p.24), which is to say an arrangement of common symbols organized according to the rules of a common language. Satisfied that their meaning is sufficiently clear, the writer exits and the reader begins their work, deriving their own *significance* from their understanding of the author's *meaning*. From this it should be clear that the act of reading is not a transaction between author and reader, but between reader and work. The writer, after all, is no longer present. Context may imply whether the author intended "I Love Roland Barthes" to be ironic or heartfelt, but the reader is at liberty to (mis)interpret this as they choose. Reading is not like compiling a computer programme, in which the same set of instructions always produce the same results. Each reading of a work is unique, and the resultant meaning "cannot be reduced to the reality of the text or to the subjectivity of the reader" (Iser, 1974, p.21). Barthes (1974) draws the same distinction between the work itself (a "servant of one master") and the text, representing each reader's own interpretation.

Four years before the publication of *The Act of Reading*, Iser compared this difference to "the way two people gazing at the night sky may both be looking at the same collection of stars, but one will see the image of a plough, and other will make out a dipper. The 'stars' in a literary text are fixed; the lines that join them are variable" (Iser, 1974, p.282). If the work is the fixed field, the two stargazers stand in for the multitude of readers. Each may respond entirely differently to the same scene. "Opening *Hamlet* at a certain point will always reveal him eternally bracing himself to murder his uncle" (Paton Walsh, 1994, p.2), and there is nothing the reader can do to alter that fact, though their interpretation may differ from that of other readers. So even if we concur with the weight of 20th century literary criticism (that the author has no monopoly on canonical meaning) one thing at least remains inviolate: the work itself, which is open to interpretation but structurally unaffected by it.

Asking from *whom* meaning is derived – authors, readers, gods – is perhaps the wrong question. Instead we should think more carefully about the nature of the work itself. Paul Duguid rightly cautions us that it is "important to think not idealistically about information, but materially" (1996), since material form is an intrinsic and inextricable part of the reading process. Barthes

himself stated that it would be “useless to attempt a material separation” of material works and texts (1979, p.73), of material form and interpreted content. Even the act of presenting ideas in type, for example, has an undeniable impact on how seriously ideas are taken. Research suggests that poor font selection leads readers to assume that the writer is less intelligent (Norwick, 2002) or trustworthy (Reber, 1999), irrespective of content.

Has the material quality of the linear printed work helped perpetuate a privileging of authorial meaning? Echoing discussions from the previous chapter (see Section 2.2, p.62), literary theorist and advocate for reader response Stanley Fish (1980, p.43) believes so. The linear printed work, with an author’s name on the cover and pages of densely printed type, is “so physically convincing… so obviously there” that readers are more likely to surrender themselves to its argument. This is what Gerard Genette calls “the fetishism of the work", where the “closed, complete, absolute” object of the printed work confers these qualities on its contents (1982, p.147). The sense of authority conveyed by print encourages readers to surrender themselves to its principle meaning. In keeping with his contemporary Wolfgang Iser, Fish suggested that formal features (such as specific textual characters and their arrangement into words) have meaning only “by virtue of their position in a structure of experience” (1980, p.91), a pattern which exists only “for wherever and however long a particular way of reading is in force” (p.274). This argument would seem to render the search for common meanings valueless, rather like seeking common interpretations of Rorschach blots. Fish is not entirely convinced that all interpretations are unique, however. In the same way that writers are influenced by the social milieu of their time, so readers may find their interpretations share common cause. Interpretation is not “independent and arbitrary”, incompatible with the responses of other readers. Instead individuals form part of what Fish titles *interpretative communities*, whose shared experiences disposes them to respond to both content – and, more importantly for us, formal and structural features of the work- in particular ways. Christian theologian and philosopher Walter C. Kaiser, for example, considers interpretative communities the best guardians against “interpretive anarchy” in their response to the bible, since these groups will regulate the wilder responses within the group (1985, p.203-4).

If this argument about community appears familiar, it may be because it shares some features with the Sapir-Whorf hypothesis, specifically the assertion that community shapes interpretation even of common symbols (see Section 1.3.6). It encounters the same criticism that membership of this group is impossible to prove. Fish’s attempt some time later to define

interpretative communities more clearly – as “no more than sets of institutional practices” (1990, p.153) – remains “vague… and unworkable”, in the words of Robert Scholes (1984). This is a fair criticism, but it is clear that there exist communities of meaning: individuals often arrive at identical readings of a work (despite having no contact) because of these shared values. A scholarly journal exists as a means of showcasing the responses of members of a particular community, and it is often critics and academics to whom individual readers turn when seeking to qualify their reading of a work. Interpretative communities may exist by “collective decision” (Fish, 1990, p.11) but certain voices (academic, critical, political) are likely to have greater influence than others.

In summary, the anti-authorist argument describes a history of reading that unduly privileged authorial intention over readerly interpretation. Reader response critics like Iser have subsequently sought to refocus critical attention on the reader’s interpretation. Both sides agree, however, that the work remains static, debating only whose interpretation (if any) should be the locus of critical inquiry.

This section has been concerned with critical readings of the author, and the extent to which they have control over meaning. Having initiated a separation of work and creator, academics initially dismissed the reader also. The reader later returned to a position of prominence, in which their interpretation (derived at least in part from the community in which they exist) became synonymous with meaning, if only for that individual reading.

This is as far as most print works could allegedly take a reader-privileging approach, but we do find some authors described as straining against the boundaries of their medium. The following section will look at works frequently cited as embodying aspects of hypertext’s network paradigm in print form, examining how effectively they hold up to antiauthorist scrutiny.

3.2 Meaning and Authority in proto-hypertextual literature

Emerging as they do predominantly from literature departments, first wave scholars of hypertext fiction generally sought to position a then-new medium in the context of literary progenitor works. While these proto-hypertextual works display some continuities with their later digital counterparts, it is argued, they were restricted by the format in which they were presented; Jay Bolter (2001, p.143) has argued that what is unnatural in print “becomes natural in the electronic medium,” for example. The praxis of this argument didn’t entirely wait for computers to catch up, however, with even Ted Nelson disbelieving that hypertext required a new medium to come

about. His notable early definition of hypertext as “non-sequential writing” (1993, p.17) is followed almost immediately by the clarification that “a magazine layout, with sequential text and inset illustrations and boxes, is thus hypertext… Computers are not intrinsically involved with the hypertext concept”.

Computer scientist and narrative theorist Janet Murray (1997, p.56) cites the *Talmud* and James Joyce’s *Ulysses* as being organised along quasi-hypertextual principles, with their interweaving structure and copious parallel annotations. Vladimir Nabokov’s 1962 novel *Pale Fire*, a 999-line poem festooned with interlinking fictitious commentary, looks very much like a hypertextual network when presented as such by Professor Simon Rowberry (2011), with nodes and links between ideas. Describing the structure of Wittgenstein’s *Philosophical Investigations*, Liestøl (1994, p.89) suggests it claims “a looser textual organization and arrangement that obviously parallel the acclaimed liberation and decentredness of hypertextual structures”, while Steve Jackson and Ian Livingston’s *Choose Your Own Adventure* novels provide another useful (though often overlooked and perhaps unrepresentative) touchstone when explaining hypertext fiction. Saporta’s 1963 *Composition no.1* offers 150 pages which can be rearranged and read in any order, a work which perhaps better resembles Nelson’s *Xanadu* project, with its plurality of pages available within a single interface.

These incunabular hypertext works are interesting as the author in each case favours the pursuit of meaning, perhaps more so even than in linear print. Nabokov himself described *Pale Fire* as being “full of plums” (1962) which he hoped readers would find, and took delight in offering cryptic clues to his true intentions. The carefully manipulated and orchestrated cross-referencing between lines of the poem leads readers towards consciously misleading conclusions, before guiding them on towards the “true” meaning. Similarly, the introduction to Wittgenstein’s aforementioned *Philosophical Investigations* opens with a mock-apology for its fragmentary structure, before acknowledging that it was published precisely to assert authorship of these ideas:

> Up to a short time ago I had really given up the idea of publishing my work in my lifetime. It used, indeed, to be revived from time to time: mainly because I was obliged to learn that my results (which I had communicated in lectures, typescripts and discussions), variously misunderstood, more or less mangled or watered down, were in circulation. This stung my vanity and I had difficulty in quieting it. (Wittgenstein, 1953, Preface)

Far from this fragmentary structure being there to generate space for the reader, it was a means of combatting the spread of Wittgenstein’s ideas into the diverse other environments in which authors gather. “Give me back my ideas!” Wittgenstein seems to cry. “Once I have them in a

book, you can cite them!" The motivations in both cases could not be further from those of antiauthorism as this thesis has discussed it.

Hypertext fiction author Stuart Moulthrop (1994, p.300) describes Delueze and Guattari's *A Thousand Plateaus* as an "incunabular hypertext" because its book sections can be read in any order, going on to describe it as "a matrix of independent but cross-referential discourses." Equating the printed book (defined in their reading by "culmination and termination points") with the "Western mind" and its implied preference for "exterior and transcendent ends," Deleuze and Guattari offer an alternate view. A rhizome (like ginger or garlic) is made up of interconnected nodes, "always in the middle, not at the beginning or the end" (Deleuze and Guattari, 1987, p.21). This is a textual view, of course, since for the reader there is a clearly defined temporal process of reading. It is the author who can see the whole work, not the reader, just as an ant on a Mobius strip believes themselves to be on an endless road, the limited nature of which can only be seen by an outside observer. "Such a characteristic organization (or lack of it)", Landow (2006, p.59) concludes, "derives from the rhizome's fundamental opposition to hierarchy". Organization is here equated with hierarchy, a reduction in the former threatening the latter, a view this thesis does not support (see Section 4.2). This all-to-all connectivity removes a sense of linear connection, but encourages readers to seek out interconnectivity between intellectual notions – searching the plateaus for plums, as it were. This approach does not resolve the issue of privileging authorial meaning, but exacerbates it.

Seeking an illustrative example of proto-hypertextuality, Landow turns to Tennyson's *In Memoriam.* Written on the occasion of Arthur Henry Hallam's death in 1833, the work is presented as "an antilinear poetry of fragments" (Landow, 2006, p.74), his lengthy analysis of which I quote in full:

> In Memoriam reveals that Tennyson, who found that brief lyrics best embodied the transitory emotions that buffeted him after his loss, rejected conventional elegy and narrative because both presented the reader with a too unified-and hence too simplified-version of the experiences of grief and acceptance. … Tennyson leads the reader of In Memoriam from grief and despair through doubt to hope and faith; but at each step stubborn, contrary emotions intrude, and one encounters doubt in the midst of faith and pain in the midst of resolution. Instead of the elegiac plot of "Lycidas," 'Adonais," and "Thyrsis," In Memoriam offers fragments interlaced by dozens of images and motifs and informed by an equal number of minor and major resolutions, the most famous of which is section 95's representation of Tennyson's climactic, if wonderfully ambiguous, mystical experience of contact with Hallam's spirit. In addition, individual sections, like 7 and 19 or 28, 78, and 104, variously resonate with one another. (Landow, 2006, p.74)

Why quote this passage? Primarily as counterpoint to Landow's conclusion on the same page:

> The protohypertextuality of In Memoriam atomizes and disperses Tennyson the man. He is to be found nowhere, except possibly in the epilogue, which appears after and outside the poem

> itself. Tennyson, the real, once existing man, with his actual beliefs and fears, cannot be extrapolated from within the poem's individual sections, for each presents Tennyson only at a particular moment. (Landow, 2006, p.74)

This juxtaposition of a lengthy critical analysis with the assurance that Tennyson has been dispersed strikes me as almost self-evidently contradictory. The first section tells us that *In Memoriam* "leads readers" through Tennyson's experiences, offering fragments whose resonances we are invited to feel. The reader is even encouraged to consider the epilogue as somehow outside the parameters of the work itself, despite Landow using biography as a means of underscoring his observations in the same brief section. This reliance on biography is the exact inverse of Barthes' goal, which is to remove the reliance of the reader on critical analysis or authorial history. Citing the advantages of hypertext, Paul Delaney joins Landow (1995, p.32) in arguing that "there is much in *In Memoriam* that needs to be explained by citing major tenets of Victorian culture", permitting the notion of interpretation validated by critical context to resurface.

Espen Aarseth's analysis of Raymond Queneau's 1961 work *Cent Mille Milliards de Poeme* (1994, p.67) is a similar effort to locate the hypertext paradigm in print, one that also ends up foregrounding the author's intended meaning. This is a work offering ten pages of fourteen-line paper strips, which can be flipped to produce 10^{14} combinations. Aarseth lauds the "simple and unstrained elegance" of the idea, but suggests there is some ambiguity in the question of authorship. Who, he wonders, creates each combination? The text? The author? The reader? I would posit that this is a moot point from the reader's perspective, as they are choosing from a range of options rather than authoring the material themselves. Control, where it still exists, still resides with the author. It is the reader who sacrifices most in this transition.

One final instance of these author-privileging examples of proto-hypertextuality can be found in Landow's discussion of T.S. Eliot's *The Wasteland.* In describing the benefits of disorientating the reader (in preparation for favouring the same approach in hypertext) Landow references *The Wasteland* as exemplary of a work that makes "disorientation a central aesthetic experience" (2006, p. 147). In his collection *The Frontiers of Criticism,* however, Eliot remarked ruefully that his supplementary explanatory notes "have had almost greater popularity than the poem itself" (1957, p.110). Peter Middleton, meanwhile, describes the work as "a ready-made academic poem with interpretations already included", complaining that academic interpretation "has gone straight along the paths laid out by [Eliot's] footnotes" (1986, p.155). Far from using

their disorientation to favour their own interpretation, I would argue that critics have come to rely upon these dense annotations as a means of ferreting out the author's intentions; my own edition crowds the text with notes, footnotes, and annotations, which overwhelm my own minor additions. Given that the academic response has been so extensive, it seems unfair to expect the common reader to privilege the author to a lesser extent under such circumstances. "Hypertext would permit one to make explicit, though not necessarily intrusive, the linked materials that an educated reader perceives surrounding the main text of *Ulysses*," argues Landow & Delany (1995, p.18). If you are insufficiently educated, however, don't worry – the critic is here to fill in the gaps.

Each of these examples has valid resonances with digital hypertext. What I have sought to reveal is that even those works foregrounded by academics sympathetic to the anti-authorist hypothesis have a tendency to privilege the author's meaning over the intentions of the reader. Despite not appearing in many academic publications, Geoff Ryman's 1996 work *253* warrants mention for making the reverse journey from hypertext to print. The story is set on an underground train carrying 253 passengers, each of whom is represented by a short passage outlining their physical appearance, personality and what they are doing or thinking. Characters are interrelated by occupation, items of clothing, or innumerate other connections. In a 2001 interview, however, Ryman suggested that the stories worked better in a printed collection, complaining that "irony is too easy in hypertext…. all fiction is a memory game, and all irony is enhanced if it's you seeing it. But hypertext links make it just too easy. They sort of slam it in your face". For Ryman, both an academic teaching creative writing and an author in his own right, hypertext seems far more privileging of the author than print ever could be.

3.3 Conclusion

This chapter sought to establish a general understanding of meaning and interpretation in a particular branch of literary theory. Meaning, initially seen as independent of the author's labours, is argued by some to become authorial property during the Enlightenment. Resistance to this view arises in the mid-twentieth century, when some critics sought to challenge a perceived privileging of both authorial intent and informed critical interpretation. Instead, interpretation was seen as arising from an individual reading, unique to that individual reader.

Central to this approach are two principles: an interpretative space, an area outside the control of the author; the knowledge that all works are intertextual, making references to the

world that are beyond the author's control and scope. Both ideas will become more significant in the following chapter, which will draw together the contradictory strands found in this and the preceding chapter, to interrogate the relationship between hypertext fiction and authority.

The final section sought to establish that the fragmentary structure of proto-hypertextual print works, works endorsed by scholars of literary hypertext fiction, can easily be seen as emphasising a search for authorial meaning.

Barthes' author was already dead – no new weapon is required to strike the finishing blow. *Nous savons maintenant* – we *now* know that the author's primacy is no longer tenable, have done since 1967. It was Barthes' understanding of the work that had changed, requiring no new medium to validate his argument. In contrast, commentators on literary hypertext fiction have appropriated Barthes' intellectual ideas to underpin (and perhaps justify) their "new" medium. This formalist translation of an academic approach into a framework for literary production misrepresents Barthes' objections, and arguably stifled literary hypertext fiction's potential affordances. Gunnar Liestøl, for example, describes narrative structure as "the basic operation of authorship" (1994, p.98) in order to describe its transfer to the control of the reader. I am reminded of the narrator in John Fowles' *The Magus*; wryly reflecting on his dilettante Existentialist supper club, he recalls their mistaking "metaphorical descriptions of complex modes of feeling for straightforward presentations of behaviour" (1966, p.10). Barthes offers an approach to authorial privilege, not a framework for its eradication.

Structure as *the* essential weapon of an author seems to derive from it being the primary difference between hypertext fiction and its linear counterpart, rather than its defacto role in the assertion of authorship. This emphasis on the material application of a philosophical outlook becomes even less convincing as we turn our attention to the history of hypertext as a technology, and the very different philosophical approaches its designers took to the idea of liberty.

Chapter 4 Hypertext, Authority, Freedom

The designers of software systems are often anonymous: New Media theorist Lev Manovich speculates that you could name key Renaissance artists or the pioneers of modern film language, but not the creators of Photoshop or Microsoft Word (2013, p.40) despite the profound impact both software packages have had on 21st century culture. As a stalwart defender of these software pioneers, Manovich is understandably exercised by their anonymity; Information Systems researchers Wanda Orlikowski and C. Suzanne Iacono (2001) similarly argue that theorists often ignore the "material and cultural properties" of software, an omission recognised by their contemporaries (Kittler, 1993; Manovich, 2001; Fuller, 2003). In their 2009 book *Racing the Beam*, Professors Nick Montfort and Ian Bogost (both well known in the field for their explorations of hypertext and interactive fiction) note that "little work has been done on how the hardware and software of platforms influences, facilitates, or constrains particular forms of computational expression" (Montfort & Bogost, 2009, p.3), which echoes Manovich's own conclusion that "excited by all the rapid transformations cultural computerization was bringing about, we did not bother to examine its origins" (2013, p.5). In his review of Critical Code Studies' first four years, Marino notes that "the lines of code that appear in these discussions are precious few and their role in the argument is often minimal, a mere passing example, an illustration that the software does in fact have code" (2010).

Name recognition of individual game designers (Jonathon Blow, Brendan Chung, Phil Fish, or Tom Francis) suggests that audiences are becoming increasingly aware of the individual talent behind even studio products (though this privileging of the individual is a weakness in Manovich's argument, as this section will illustrate). More generally, technological determinism (that position arguing that a society's technology determines its social and cultural values) has moved over the last decades from "a critic's term and a term of abuse" (Kline, 2001, p.15497) to an acknowledgement of "raw technological determinism" (Ceruzzi, 2005, p.586) to concerns about the "widespread euphoria" around information and communication technologies (Unwin, 2009, p.1045), which mirrors the increasing cyberutopianism found in popular depictions of figures like Elon Musk (see Section 4.4 for a fuller discussion). Recognition of this historic omission can also be found in the establishment of MIT's *Software Studies* book series,

David Berry's 2013 *Philosophy of Software,* and the open-access, peer-reviewed journal *Computational Culture* in 2008 and 2011 respectively.

Where the previous chapter outlined the complex origins of Roland Barthes' *Death of the Author* this chapter explores the tangled origins of hypertext, which converge in the Bay Area counterculture of the 1960s. Exploring these latter ideas will allow both histories to come together in Chapter 5. Firstly this chapter argues for an historic correspondence between the development of networked computer systems and a resistance to authoritarian hierarchies within tech and academic communities, before arguing that the authoring systems devised by computer scientists are not neutral, but instead regulate discourse. These arguments have deep implications for both author and reader empowerment in hypertext fiction.

So far this thesis has sought to establish that literary hypertext fiction was considered the product of two parallel, interdisciplinary developments: technological developments within computer science, and theoretical developments within literary theory. While the latter has generally been the locus of intellectual enquiry, the former has been routinely downplayed or, in some cases, "misrepresented in order to illustrate a preferred theoretical model" (Bell, 2010, p.10). This is particularly important because, as this first section will argue, these frequently unsung technologists are in the position of being what Michel Foucault calls *founders of discursivity*.

Two years after the publication of Roland Barthes' 1967 essay *The Death of the Author,* Foucault gave a lecture in which he too explored the relationship between author, text and reader. Attempting to understand why some authors are more culturally significant than others, Foucault argues for a category of superior author, constituting those who are "not just the authors of their own works [but]… the possibilities and the rules for the formation of other texts" (Foucault, 1977, p.132). Fantasy author J.R.R. Tolkien did not merely write fiction, for example, but also created many of the parameters by which subsequent works would be judged or composed. Even works that reject his rules are popularly positioned in this context: an article about renowned author Michael Moorcock, for instance, is titled "The Anti-Tolkien" (Berbergal 2014). In addition to working as an engineer and architect, Renaissance polymath Filipo Brunelleschi devised many techniques that other artists would come to adopt, while Sigmund Freud is seen both as an author, and a pioneer of psychoanalysis.

As this list implies, membership of the elite society of discursive founders is positioned as contingent on also being a practitioner. It seems ironic that in setting out to deconstruct

authorship, Foucault finds himself instead further valorising individual authors, elevating certain individuals from the already privileged category of common authorship. In his eagerness to equate the achievements of computer science with those of pre-Enlightenment high culture, Manovich also seems to privilege the idea of individual rather than collective achievement. Identifying cinematic innovation with filmmakers such as the Lumière Brothers, Griffith, and Eisenstein (Manovich, 2013, p.40), for example, indirectly undermines the far larger interdisciplinary teams that worked on such films. Orson Welles might easily fit onto this list, but it was cinematographer Greg Tolland who was at least partially responsible for the visual storytelling of *Citizen Kane*; one well-worn story tells of Tolland covertly realigning Welles' lighting each night, as the director was used to lighting for stage productions (Carringer, 1982). Artists from Brunelleschi to Damien Hirst have used apprentices in the creation of their work, with Hirst famously employing 120 assistants at his studio. A related flaw in Manovich's earlier challenge is that software development also relies upon large interdisciplinary teams, making a favouring of the most literate, celebrated, or articulate voices to define an intellectual history seductive but ultimately misleading.

This auteurist fallacy is routinely criticised in film theory. Theorist David Bordwell (1987, p.1187) reminds the reader that all the techniques for which Welles became famous were well-known at the time (and in some cases, were decades old), with critic Georges Sadoul similarly describing *Citizen Kane* as "an encyclopaedia of old techniques" (1946, p.9). Arguably, neither is criticising Welles' achievements; instead they are resisting the tendency to oversimplify a tangled genealogy into a single inspiring (or inspired) visionary. In this light, we may reconsider Manovich's frustration that those in "the business of culture" know of D.W. Griffith but not the founders of modern computing, since this individuating approach carries the same problematic assumptions about origins and innovation that Bordwell and Sadoul are addressing. In his overview of early American cinema, for example, historian Anthony Slide notes that Griffith "did not invent editing or the close-up. He did not invent film grammar. What he did was... refine the techniques that those earlier pioneers had introduced" (1994, p.96). Certainly Griffith and Welles crystallised or perfected some techniques, but can either be readily identified as their *creators*? Indeed, should anyone be identified in these terms? Foucault may list Freud as the founder of psychoanalysis, but it was physician Johann Reil who originally coined the term (Binder *et al,* 2007, p.1091) and Phillipe Pinel (1801) whose ideas of moral therapy scaffold

Freud's early works. Standing on the shoulders of giants has the dual benefit of both letting us see further and making us more visible.

Despite implied elevation of certain figures, I doubt either Foucault or Manovich would actually celebrate the oversimplification of an historical narrative to a handful of extraordinary voices. Instead their work reflects a general social need for thoughtful reduction of complex genealogies to useful levels of abstraction. We speak of Michael Joyce's *afternoon*, but it was authored in *StorySpace*, a writing environment collaboratively created by literary theorist Jay David Bolter, writer Michael Joyce, and Professor of Computer Science John Smith. Despite this, the latter doesn't appear as an author on the original paper (Bolter, 1987) or in the acknowledgements on the StorySpace website (StorySpace, 1999), though Landow at one point mentions him as a co-creator (1994, p.40). Smith himself seems untroubled by the omission, partially on the basis that that he was "not interested in prose, in fiction" (Barnett, 2014, p.127). A willingness to allow an interdisciplinary history to be written by practitioners and theorists from one discipline alone risks occluding an alternative genealogy, however, one that foregrounds these other voices. We should be concerned about a selective history of hypertext fiction that privileges particular ideas from literary theory, using the views of computer scientists primarily for support. It is perhaps unsurprising that Nelson is so frequently referenced in histories of interactive fiction since, as a sociologist by training, he provides a view of hypertext that sits comfortably alongside that of literary theory. If the founders of discursivity are the privileged authors, then computer scientists may arguably embody the opposite: a class of authorship whose importance is frequently underplayed.

In the same essay that gives us the term "founder of discursivity", Foucault rightly asks why novelists are "endowed with the 'author function'" while writers of private letters, contracts etc. are not (1977, p.131). This questioning is echoed in an unrelated passage from David Kolb (1994, p.323), who lists a plethora of writing modes (laundry lists, thank-you notes, scholarly treatises etc.) whose "points and criteria have little in common" but nonetheless do not carry the distinction of being "authored" (see also Section 2.2). We might extend this question to those who, like John Smith above, determine that their technical contribution does not merit the same attention as those who employ their work for artistic purposes. An answer to this question can be derived from a later passage in Foucault's work, which offers a potential impediment to granting computer scientists the author function, and thereby a negation of their right to be called founders of discursivity. The passage argues that while scientific achievement is erased if

superseded (Galileo's work became obsolete as it was disproved; phlogiston is a defunct requirement for combustion) figures like Freud and Marx continue to be of relevance even after their theories are challenged, since they provide valuable context for later academic thought. This in turn prevents scientists from being founders of discursivity since, however radical their ideas may be at the time, history will inevitably see such theories either superseded or refined into obsolescence.

Such an absolutist separation of art and science is probably another unfair characterisation of Foucault's intentions. It is, however, a familiar division across academic disciplines. In his influential 1959 Rede lecture *The Two Cultures*, scientist and author C. P. Snow argued that the intellectual life of western society is split into the sciences and humanities, with the latter unduly privileged in the British education system. Having argued that all ideas come from the collision of pre-existing concepts, critic Arthur Koestler (1964, p.45) also sought to understand how scientists and artists respectively reconciled the competing logic of previously unconnected principles. His conclusion was that, while the sciences seek to fuse new fields into a coherent whole, the arts (by contrast) explore the consequences of that collision and consciously seek out contradictions, an argument made almost verbatim by Jay Bolter and Richard Grusin (2000, p.57) in their writing on hypertext.

Science as seeking coherence, while the arts seek disjunction, does not chime with Peter Gallison's antireductionist view of science (see Section 1.3.1) or the wider ambitions of Digital Humanities. Nonetheless, it is commonplace to see arts and sciences used as proxies for logic and creativity, an approach that suggests scientific discourse is governed by the linear argument, creativity by non-linear or associative thinking (see Rosenberg, 1994, p.277; Moulthrop, 1994, p.302; Kolb, 1994, p.323). This pairing does not chime with my own experience, however, which suggests that artists seek a coherent logic in their final work, arrived at precisely *by* associative thinking; nonetheless this distrust persists in some academic discourse. Having fought to establish that there were multiple competing truths, artists and art theory are inevitably resistant to any suggestion that subjective works may have some underlying and objectively retrievable logic.

The framing of science and the arts as respectively hybridising or deconstructing intersecting ideas has consequences for the discussion of hypertext and literary theory that is the focus of this thesis. One could argue that while computer scientists of the 1960s hybridised

information theory and knowledge management to devise hypertext, the literary theorists of the 1980s and beyond sought to deconstruct the affordances of this hybridity. In attempting to devise a framework for the analysis of literary hypertext fiction, however, such scholars favoured certain characteristics as essential (the hyperlink, for example), while other features were ignored (Engelbart's focus on collaboration as essential to the hypertext project, for example). Nelson (1993, p.2-3) believed hypertext to be more than its popular conception as a series of "text chunks" connected via links. His vision of a hypertext network was far more about the presence of all works in the same system, than separating sections of works and establishing concrete connections between them. "The world of paper is at least unified and compatible," he continues, with books, manuscripts and notes "stored on the same shelf, opened on the same desk." It is this universal access that most exercises Nelson, rather than the mechanical means of achieving it, and I would consider this his proper legacy. Following in the tradition of his colleague Douglas Engelbart, Nelson is seeking not just another epistemological structure, one more organising standard among many, but a "framework of reunification" (p.4) that brings all works together in one place. It was to this end that he devised his *Xanadu* system, in development since 1960 and implemented as Open Xanadu in 2014. Despite Nelson's system remaining largely the preserve of interested academics, it arguably expresses far more of Barthes' ambition than a stand-alone, read-only system can (see Section 2.1).

In other cultural contexts hybridity is generally considered "subversive… of essentialism and homogeneity" (Pieterse, 2009, p.81). In order to define the potential of hypertext fiction through its hybridity, however, essentialism about both its form and affordances seems to have arisen. Describing the imposition of a shared Australian cultural identity at the expense of the historic racism experienced by the aboriginal population, cultural theorist Ien Ang argues "the very equation of hybridity with harmonious fusion or synthesis … produces power effects of its own" (2001, p.195). It would be crass in the extreme to conflate this very real act of cultural occlusion with the conflation of two academic fields, but the language resonates in the wider critical consensus around literary hypertext fiction's perceived intrinsic qualities. Selective identification of certain historic qualities as essential to the hypertext project permitted a theoretical consensus to develop, one which conveniently aligned it with then-popular branches of continental literary theory.

Clearly, arts and sciences represents a flawed binary at best. I will instead revise Foucault's terms to *iterative* and *supplementary*, which better reflects the spirit of the original

idea. Iterative ideas supersede one another, while supplementary innovations may continue to co-exist alongside more up-to-date or accurate discoveries. These terms do not contradict Foucault's original project, but allow for scientific ideas to slip between what could otherwise appear to be absolutist categories: no General Practitioner would employ Humorism for diagnostic purposes, for example, but the use of humoral regulation to describe the circulation of antibodies and other agents in the body is still common medical practice. Professor Noah Wardrip-Fruin argues that any history of new media technology should emphasise "technological systems and proposals other than those that achieve dominance" (2011, p.320), since these less-remembered technologies tell us what has been removed in the process of refinement. A newer, more successful technology may sacrifice the ambitious goals of previous technologies, forgoing their potential affordances, at the expense of an accurate history of its development.

Seeing Foucault's categories as either *iterative* or *supplemental* is helpful in beginning to identify how computer scientists could be considered founders of discursivity, without undermining their scientific underpinnings. The 2013 release of Adobe's *Creative Suite*, for example, saw the removal of the *Pixel Bender* plugin, with its features transferred to other tools. This would appear to be an *iterative* change, since Adobe assumed graphic designers would adapt to their new, superior tool. Many users, however, refused to upgrade, preferring the unarguably less functional original tool. Better does not appear to constitute preferable, at least in this case. We see the same logic in the Electronic Literature Organization's efforts to archive not simply significant *works* from the first generation of interactive writing, but also the technologically obsolete code that made them possible. This is important because, as N. Katherine Hayles (2007) argues, the evolution of digital computers is entwined with that of electronic literature, "just as the history of print literature is deeply bound up with the evolution of book technology."

Hayles is right to emphasise the importance of preserving not just the works but also the medium in which they were authored, since each embodies a distinct point in the contiguous evolution of each respective field (cf. the efforts of the Software Presentation Society). Faced with the challenge of coherently negotiating between the capabilities of a rapidly evolving technology & the historic affordances and theories of literature, theorists like George Landow, Jane Yellowlees-Douglas, and Jay Bolter sought to pin down essential qualities of hypertext in order to seek these correspondences. There is a seductive quality to this essentialism, as it

allows general statements to be made about a medium's potential. "While information may be infinite, the ways of structuring it are not" says renowned designer and TED co-founder Richard Saul Wurman (2001, p.40), whose LATCH typology is a fixture of graphic and web design courses. Ironically these five categories for organising information (by location, alphabet, time, category, and hierarchy) fail to accommodate the mnemonic, of which LATCH itself is an example. The purpose of this example is not hubristic, but as a cautionary reminder to be sceptical of any essentialist position.

Critics of literary hypertext fiction have a complex relationship with the software component. Some chose to ignore it entirely: in a talk devoted to authorship and interactive media, Professor of Media Aesthetics Christiane Heibach (2000) states that she will not discuss "the computer as medium", despite acknowledging that all works she discusses "include software as an authorial element." Marie-Laure Ryan, similarly, describes interactive narratives as being composed of "invisible code" (2006, p.126) but does not explore this code in detail. "Invisible code" echoes Ted Nelson's "versatile gizmos" (Nelson, 2003, p.30) or the "dream machines" to which Sherry Turkle alludes when describing chess player Jarish's experience with computers:

> There is the computer that Jarish mythologizes as the dream machine that can make anything possible and as the rule machine that makes everything that is crazy ultimately controllable. (Turkle, 2005, p.87).

This scene brings to mind Arthur C Clarke's aphorism "any sufficiently advanced technology is indistinguishable from magic" (1973, p. 21). Engagement with *how* things work is vital to understanding *why* they do. Authorship within interactive media should be seen as a negotiation between two poles - the software and narrative designers respectively – and it is vital that both be adequately understood, to avoid privileging one at the expense of the other. The following section will foreground some challenges associated with the integration of a new technology with existing theoretical and intellectual paradigms.

4.1 Code and Culture: Negotiating Authorship

In March 1994, Jane Yellowlees-Douglas submitted an essay on closure and indeterminacy in interactive narrative, under the title *But When Do I Stop?* When it was published in George Landow's book of November that year, however, the title had changed to *How Do I Stop This Thing?* The language is important, regardless of the motivation for this change – the first sees the reader addressing an unseen author, while the second addresses the system itself,

empowering it to the detriment of the reader and letting the author off the hook. This despite the essay being written in advocacy of the reader's control over the narrative.

Where discontinuities exist between these allegedly parallel projects, which should take precedence over the other? The concurrent evolution of hypertext and literary theories may be explored by returning to an earlier work by Lev Manovich, in which he suggests that new media technologies possess what he calls a *code* and a *cultural* layer (2001, p.46). The code layer, he argues, consists of such technical apparatus as data packets, lookup tables and data structures. The cultural layer is what the code produces: encyclopaedia, short story, etc. Joyce's *afternoon*, for example, uses markup and data tables (belonging to the code layer) in the production of a non-linear story (the resulting cultural layer), and as Manovich continues, "we may expect the computer layer will affect the cultural layer." This approach differs from the euphemistically-labelled "old media", in which structure is synonymous with output. A table of figures printed on paper does not conceal some additional apparatus that makes it function.

Manovich's argument might helpfully be framed in the context of Marshall McLuhan's famous 1964 aphorism "the medium is the message" (p.8). Like Barthes' "death of the author", this idea is frequently misrepresented, despite being clarified in its following sentence: "the personal and social consequences of any medium-- that is, of any extension of ourselves -- result from the new scale that is introduced into our affairs by each extension of ourselves, or by any new technology." Technology introduces a change to social affairs that can be considered independently from the content.

What both McLuhan and Manovich leave implied but unspoken is the extent to which form curtails or dominates content. By this, I mean the medium in which an idea is represented does not merely shape that idea, but also restricts which facets of that idea *can* be represented. This notion is mentioned in passing by media theorist Neil Postman, in his book *Amusing Ourselves to Death.* Discussing the medium of the smoke signal, he suggests it is a form incapable of conveying ideas of deep philosophical complexity; "its form excludes the content" (Postman, 2005, p.7). Technologies, he writes elsewhere, are not simply "machines which convey information" (*ibid.* 1979, p.39). They classify and frame the world for us. We receive a similar argument from Landow, when he argues that, as both a translator and storehouse of experience, language is "a reducer and a distorter of experience" (2006, p.30-31) or from Information Studies scholar Michael Zimmer's observation that new media technologies act like

“lenses, shaping, perhaps even distorting, the information they present and framing the very knowledge that their users are meant to obtain” (2009, p.97).

Form and content, medium and message, code and cultural layer: each describes a *framework* defining the parameters for the *content*. Tying this back to Isaiah Berlin’s notion of positive liberty, which asks “what, or who, is the source of control or interference that can determine someone to do, or be, this rather than that?” (1969, p.121), we see that control is an apt term, since the code layer remains (in most cases) beyond the power of the user (see Section 4.2.2). Interference too is appropriate, since the interface is designed to allow the structuring of information in a way intended by the designer.

Being a practitioner is no longer a requirement to join Foucault’s exclusive founders of discursivity, at least in the context expressed above, since it is possible for a computer scientist to devise a set of parameters that creative writers subsequently adopt. Douglas Engelbart’s famous tech demo of 1968 introduces the fundamentals of the computer interface, but the methodology could scarcely be more prosaic. A shopping list is used to showcase bulleted lists, while his prototype word processor is demonstrated by repeated input of ‘word’. In a similar vein, Photoshop’s initial 1988 development was undertaken by Thomas Knoll, a computer science PhD candidate, under the enthusiastic encouragement of his brother John, who worked for *Industrial Lights and Magic*. The image-processing utilities he created proved so useful to his brother that Thomas decided to package them into one application, which became an early version of Photoshop. Thomas echoes Foucault and Snow’s binary in his description of their relationship: “[John is] more of an artist type and I’m more of a technical type” (Knoll, 2015). In discussing the origins of photography, Roland Barthes argues in favour of chemists, rather than the painters who leant the medium its grammar of framing and perspective (1981, p.34), just as Thomas Knoll’s research into “computer vision and image recognition” led to the creation of tools with a far wider range of potentials. This logic would arguably make French inventor Louis le Prince the founder of cinematic discursivity, since he shot the first moving pictures (Howells, 2006, p.179), or the forgotten Mayan who extracted cochineal dye the founder of Renaissance painting’s distinctive luminous shadows.

The relationship between technology and discourse is complex, since one field is likely to influence another, but it is fair to say that, without the ‘scientific circumstance’ of Barthes’ ingenious chemists, there could be no photography. This does not mean that chemists intended to invent photography, any more than Engelbart intended to create *afternoon*. Technology

should instead be seen (intentionally or otherwise) as the parameters by which we abide, an argument explored in Postman's 1993 essay collection *Technopoly*.

Writing, Postman argues, is not a "neutral technology", but one whose "functions follow from its form" (p.8). In illustration of this point, he offers the story of the Egyptian king Thamus who, upon being offered the gift of writing, warns that it will lead his people to rely on "external signs instead of their own internal resources" (p.4) in making judgements. This argument is not about memory, as it may appear. Both Postman and (by proxy) Thamus are suggesting that representations of knowledge become ersatz substitutes for empirical experience, just as reading about birth and pregnancy may provide useful context, but should not be substitutes for lived experience.

Writing is the transmission of abstract thought via a sequence of symbols, which gives rise to the epistemic problem that Postman identified. Mistaking the representation of knowledge for knowledge itself means we pay insufficient attention to the mode of transmission - and its impact. Philosopher and contemporary of Barthes Jacques Derrida makes a similar argument, suggesting that submission to the structure and logic of a specific language means the writer is "governed by the system" (1974, p.168), and similar claims are found in the work of Edward Sapir (2010, p.8) and other key linguists (Saussure, 1983; Bloch & Trager, 1942; Chomsky, 1957; Lyons, 1968; Halliday, 2003; see also Section 1.3.6).

Describing the process of transcribing oral tradition as written text, classical historian William Johnson suggests that scribes first elided "minor points of articulation or breath pauses", with subsequent practice being to maintain "only the bare-bones punctuation of major points of division" even when more detailed punctuation became available (2009, p.262-263). Despite the best intentions of the scribes, this transcription process has rationalisation as an unavoidable consequence, in turn reducing the intrinsic diversity of spoken language.

Rationalisation is an interesting term, covering two potential meanings: both *to reduce in complexity* and *to impose a logic*. Both meanings are intended here, and computer systems are an extension of this. Human Computer Interface expert Stuart Card and his team described using a computer as being a "stream of symbols flowing back and forth" (1986, p.4) between user and machine. Mediating (transcoding?) lived experience into speech, speech into written text, written text into hypertext, and so on, requires submission to the specific symbolic structure of that medium. If navigation of a hypertextual application is still generally considered to constitute "a dialogue between the user and the application itself" (Mazzali-Lurati, 2007, p.166)

then the limitations of this symbolic stream frames and shapes the dialogic modes available to the participants (see Section 5.3).

Exploring the complex question of authorship that Barthes raised, Derrida (1974, p.158) introduced the notion of double commentary: first, thought is transcribed into symbols by the author, in the form of writing; secondly, the reader deciphers and interprets those symbols. Each stage of transmission requires complex concepts to be corralled and rationalised to fit the language system of a particular time and place. This reduction to symbols both *forms* and *informs* the content.

How a work is presented undeniably helps shape the reader's response: consider the difference between a funeral invitation set in Comic Sans and one in Helvetica, for example. This impact can be enormous. "Typography," says Postman, only half-jokingly, "fostered the modern idea of individuality, but it destroyed the medieval sense of community and integration" (2005, p.29) while McLuhan and Logan (1977) suggested that the development of the alphabet favoured abstraction and logic, to the detriment of more logophiliac historical approaches to knowledge management. Alvin Kernan, too, suggests that the shift to print helped sweep away "an older system of polite or courtly letters" (1987, p.418) and ushered in a more limited symbolic register, while Espen Aarseth argues that the stability of paper-based documents "is as much a product of our metaphysical belief in a transcendental text as an inherent quality of the physical object" (1994, p.55). In other words, typography (here in the sense of leaded type vs. unique individual handwriting) standardises the appearance of characters, and thereby neutralises one aspect of its nuance.

This argument about form and standardisation may be criticised, perhaps pointing out that standardisation can be creative. Umberto Eco, for example, argued that the standardisation of Italian afforded by television fostered a sense of unity within his home country (1993). Both Eco and the preceding scholars agree, however, on the *power* of standardisation, disagreeing only on the nature of its outcome. Italian unity was a positive by-product of collapsing linguistic diversity, but it was still an act of standardisation. Remembering that media can be most readily defined simply as a means of communication, it is fair to surmise (recalling McLuhan, 1964, p.9) that the form in which we present ideas influences the way in which we respond to them, as Gerard Genette discusses with reference to the printed work in his 1997 work *Paratexts: Thresholds of Interpretation*. Such framing elements are not entirely deterministic – it is possible

to read *Hamlet* in Comic Sans and still be moved – but paratextual presentation is likely to shape the reading experience.

If form really does define content to a certain extent, then it is worthwhile viewing the medium of hypertext itself as already the product of distinct intellectual and historical traditions: information science, knowledge management, and computer science. The selective emphasis placed on those aspects of hypertext for which literary theorists could see a clear purpose or function - the hyperlink, most obviously – becomes more negatively essentialist when seen in the context both of how such features were intended to be used, and those other elements that were lost in disciplinary translation. The historical genealogy of hypertext as an independent medium is frequently referenced in first wave criticism (Bolter and Grusin, 2000; Heibach 2000) but less comprehensively explored. The next section seeks to identify some of the intellectual climate underpinning the specific historical moment that created hypertext.

4.2 Historical Genealogy of Hypertext

Hypertext's genesis on the West Coast has been the subject of extensive study elsewhere. This section, however, seeks literally to reiterate it. The genealogy of hypertext offered within the context of hypertext fiction too often focuses on the hyperlink, in preference to principles such as participation or simultaneous editing that better define the goals of its designers. This approach delegitimises the use of Nelson and Engelbart as supporting evidence for the convergence argument (see Section **Error! Reference source not found.**), since their understanding of hypertext differed from that of theorists who borrowed their work to underpin a certain framing of the medium. Engelbart's original demonstration of a shared work area offered dual cursors and simultaneous text editing, so why were these not considered vital components of a hypertext system, while the hyperlink was? It is important to underscore the idea that collaboration was the goal from the start, much as being networked was fundamental to Barthes' anti-authorist argument. The hyperlink is a means to an end, and where it fails to fulfil the goals of both continental literary and hypertext theories, it cannot be a tool for the liberation of the reader. Just as computer scientists are downplayed as founders of discursivity in literary hypertext fiction, so the philosophical intentions of Engelbart *et al.* are modified to suit the arguments made by subsequent theorists of literary hypertext fiction. Returning to these original work is the only way to identify the strands of logic that underpinned their arguments.

The ultimate goal here, however, is to understand some versions of hypertext not as essentially *progressive* but as an alternative, potentially even *regressive* form of communication, at least as it relates to the relationship between reader and author. The *hyper-* in hypertext encouraged theorists to understand it in the sense of *over*, *beyond*, *above*. This language encouraged a view of hypertext as *text plus*, writing that goes beyond what simple written text can achieve. For the reader, however, hypertext can in fact be a reductive, limiting medium, which restricts as much than it liberates.

The focus in the following section, then, is explicitly on hypertext as a medium; it is not, cannot be a comprehensive history of information science or 1960s developments in computer technology, though the examples identified here are hopefully not too perverse or idiosyncratic. Literary theorist Michael Toolan defines a narrative as "a perceived sequence of non-randomly connected events" (2001, p.8) and it is in that spirit that these examples are offered. It is a narrative history that attempts to understand networked information systems as part of an historical epistemic tradition tending towards democratic approaches to knowledge. In setting itself as part of this historic resistance to hierarchical writing structures, hypertext offered itself as the resultant alternative, one that can facilitate a more liberating discursive space for readers. Its approach relies on a set of rules and approaches that places it within the purview of positive liberty.

The aims and concerns of hypertext pioneers have a wider historical context, of course, one that will be briefly evaluated with reference to Dr Samuel Johnson's dictionary, the encyclopaedia of Denis Diderot, the Universal Decimal Classification System devised by Paul Otlet, and approaches to systems offered by Vannevar Bush and those influential computer scientists he inspired.

4.2.1 Genealogy of Hypertext: Dictionary

Dr. Samuel Johnson's dictionary was not the first to be published; historian Jake Lynch (2006, p.36) places the number of preceding lexicographical works at around 633. It was, however, the first to focus on the entire English language, rather than providing tables of complex or difficult words alone. Recruited by a group of English booksellers in 1746, Johnson spent nine years assembling his dictionary, using a team of assistants to undertake the clerical work. "The world contemplated with wonder so stupendous a work achieved by one man", notes biographer James Boswell (1904, p.209), and while some scholars (Korshin, 2005, p.18; Lynch 2006) suggest that assistants and friends may have provided more than merely *editorial* assistance,

Johnson's idiosyncratic approach to lexicography is certainly evident. When identifying what he considers definitive spelling, Johnson displays a personal preference for Classical Latin or Greek sources, usually over common regional variations of the time (he also rejects the aforementioned practice of including alternative spelling tables). The old French word *dette* was imported into England in the 14th century, for example, but Johnson favours the obscure Latin root *debitum* (Trask, 2013, p.24) resulting in our contemporary use of the same strange spelling in the word *debt*. This despite Johnson's clearly stated intention that this be a dictionary of English "as spoken", not as he would wish it to be.

Historian and politician Horace Walpole may have been incorrect in believing that Johnson's reputation would not last, but there is some truth to his concern that "a society should alone pretend to publish a standard dictionary" (quoted in Reddick, 1996, p.20). With a language so shaped by social class, regional difference, and so on, who could identify the "correct" version of each word? In the dictionary's preface, Johnson insists that its intention is not "to form, but to register the language" (1755), contrary to his desire just under a decade earlier to "fix [to make fast] the English language" (1747, p.12). In practice, Johnson's work became the *defacto* authority by which English usage was defined, just as lexicographer Noah Webster came to define American English. Webster, it should be noted, had no such compunction about language standardization. As a proud spelling reformer he did not necessarily invent new spellings, but heavily enforced specific spellings that he felt to be "correct" (Trask, 2013, p.24). Despite its inconsistencies, Jack Lynch argues that Johnson's work became "the first standard dictionary—the first to be authoritative, the first to settle arguments" (2006, p.45). It imposed a new standard, simplifying and standardising a language system built up piecemeal by word of mouth.

Johnson's dictionary is foregrounded here for several reasons. Firstly, as Lynch's quote illustrates, *standard* and *authoritative* are often taken to be synonyms. Johnson's more extensive and comprehensive dictionary superseded its predecessors, becoming in the process the *defacto* standard. Secondly, it illustrates a baseline approach to information organisation: sorting by only one characteristic, as seen in Wurman's LATCH typology as presented earlier in this chapter. This simple form of organisation will be contrasted with the more complex approach found in the encyclopaedia, before considering how these two approaches relate to hypertext. Finally, the dictionary demonstrates the organisational complexity engendered by the production of a universal reference work. Alphabetical organisation makes it easier to look up

and organise words, but prevents organisation by subject matter, for example. Each additional level of organisation permits a commensurate additional level of authorial intrusion; consider a dictionary organised first by root (Latin, Romance etc.) then alphabet, or one organised by chronology, sorted arbitrarily into neologisms and "traditional" terms. The introduction of an additional organising principle betrays a personal bias in favour of a particular structure, while the *lack* of hierarchy implied by alphabetization is part of its claim to objectivity.

Even the selection of alphabetical order is not without bias. Today it is commonplace to assume that all dictionaries must organised alphabetically by first character, but this was (and is) not always the case. *Lisa al-`Arab*, a widely referenced common-use Arabic dictionary, is organised by the root or radical (Haywood, 1960, p.78), a practice seen today in a small number of English language so-called "reverse" dictionaries. Earlier conceptual dictionaries grouped words first by subject, then by lexicographical sequence, according to the needs of their specific audiences. The alphabetical dictionary sacrifices this feature in favour of utility, a rationalising of knowledge that moves it from a *subjective* epistemological model (as seen in conceptual dictionaries) to a status of quasi-neutrality. Tom McArthur describes the frustration of the Scholastic tradition at the rise of alphabetization prompted by the emergence of the printing press:

> Alphabetization… must have seemed a perverse, disjointed and ultimately meaningless way of ordering material to men who were interested in neat frames for containing all knowledge. Certainly, alphabetization poses problems of fragmentation that may be less immediately obvious in word lists but can become serious when dealing with subject lists. (MacArthur, 1986, p.76-77)

Sorting data by alphabetization has the advantage of being as close to objectivity as we can get. The concretising of the dictionary as a purely linear, alphabetical work allows it to be contrasted with the encyclopaedia, which took and maintained a more associative approach to knowledge.

4.2.2 Genealogy of Hypertext: Encyclopaedia

Much as *university* derives its name from the Latin for *whole* or *totality*, so encyclopaedia's origin in the Greek *enkyklios paideia* (meaning *general or well-rounded education*) implies that all worthwhile knowledge is contained within (as an aside, it is ironic that in devising our modern word *encyclopaedia*, Latin copyists mistakenly concatenated two Greek words into one.) Just as universities have been historically separated by discipline, so the designers of encyclopaedia sought to identify an encompassing macrostructure by which to organise their ideas. After all,

the *paideia* of encyclopaedia referred to the proper education of an ideal member of the aristocratic class, with our subsequent idea of a book containing *all* knowledge being a relatively recent innovation. Even the earliest known example, Varro Retains' lost first century work *Nine Books of Disciplines,* organised its contents according to the Hellenic Liberal Arts structure, a model similarly adopted by Pliny the Elder for his 1st century *Naturalis Historia.*[11] Gregor Reisch's 1503 *Margarita Philosophica* also patterns itself around the Liberal Arts, and it is not until the Enlightenment that we see new macrostructural approaches beginning to emerge. English physician and philosopher Sir Thomas Browne, for example, arranges his 1672 *Pseudoxia Epidemica* according to the Renaissance scale of creation, which ascends from minerals to cosmology. Perhaps the most striking example of these ideological organizing principles, however, is that adopted by 18th century French philosopher and writer Denis Diderot during the compilation of his *Encyclopédie.*

Having previously authored a small number of historical and philosophical works, Diderot was persuaded by bookseller and printer André Le Breton to translate English writer Ephraim Chambers' 1728 *Cyclopædia* into French. Diderot's ambitions, however, soon diverged from mere translation. Having assembled an array of sympathetic writers and thinkers to his cause, he set out to expand the original work in a manner that won him significant enemies within the church and French establishment at large. Doubt was cast upon the verifiability of the Resurrection; the divine right of Kings was downplayed in favour of individual human rights.

This radical approach extends beyond content to the macrostructure of his encyclopaedia. Pursuing his Enlightenment philosophy, Diderot opted to organise the work into three branches: *memory*, *reason,* and *imagination*. No miscellaneous category was permitted: all knowledge was compelled to fall within this tripartite structure. This is not a model that excludes any particular content; Diderot proved quite capable of accommodating anything, as this spectacular flow chart (sent to potential subscribers) demonstrates:

[11] While these works undertake the same project, the term encyclopaedia itself is not used until Johannes Aventinus' verbose 1517 work *Encyclopedia orbisque doctrinarum, hoc est omnium artium, scientiarum, ipsius philosophiae index ac division.*

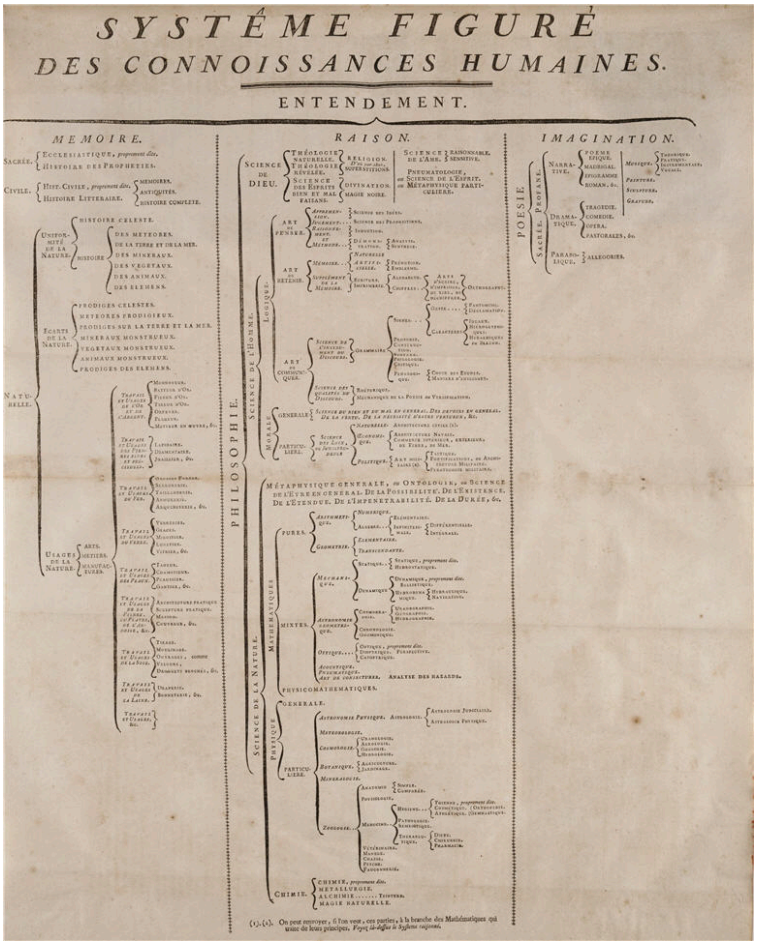

Figure 6: "Système figuré des connaissances humaines." (Diderot, 1751)

Had Diderot omitted religion *entirely,* his claim to universality would have been void; instead *Theology* is considered a branch of *Philosophy*. By incorporating such ideas within this philosophical system, the claim to have successfully rationalised knowledge (despite the ideological bias) stands. In *Discours Préliminaire des Éditeurs*, a primer for the full Encyclopédie, Diderot's co-editor Jean Le Rond d'Alembert outlines their approach to the work. The divisions and subdivisions, he explains, were inspired by the Cartesian principle of simplicity (1995 [1751], p.22). In reducing principles to a level of useful abstraction, he continues, it becomes possible to understand the relationship between scientific areas that a more comprehensive study would preclude. The extent to which any objectivity claim made by these compilers can be taken seriously is left to the reader, though I would quote Diderot's own later comments in his 1796 *Supplement to Bougainville's 'Voyage'* - "Watch out for the fellow who talks about putting things in order. Putting things in order always means getting other people under your control" (p.225) – and the observation of Historian David Bates that "any

division and classification must be somewhat arbitrary, because the complexity of things does not lend itself to simple orders" (2002, p.15-16).

This section has so far discussed the dictionary and the encyclopaedia, two significant philosophical approaches to the organisation of information. The dictionary is arranged alphabetically, prioritising accessibility over any wider context. This simplified macro-level organisation by alphabet is essential to the dictionary's objectivity claim. An accident of grammar places *Diamond* and *Dictionary* beside one another in Johnson's work, not some ideological intent. Writing of Vincenzo Coronelli's 1701 *Biblioteva Universale,* James Fuchs calls alphabetization "the great leveler" (quoted in Headrick, 2000, p.163), since no authorial intercession could be permitted. Any system of indexing or cross-referencing would require the influence of a lexicographer or editor, whose selective foregrounding of certain concepts would undermine the flat hierarchy of alphabetical organisation. Cross-referencing belongs more to the realm of the encyclopaedia, which organises its information subjectively, favouring a more associative and didactic model. In drawing attention to the way in which areas of knowledge are connected, the encyclopaedia of Diderot *et al.* can make no claim to be objective in their approach, instead attempting to draw comparisons between different knowledge areas.

It would be possible to argue that a phonetic dictionary (one placing fish/phonograph in close proximity) would avoid even the subjective question of spelling, but this would in turn place greater emphasis on accent and pronunciation (*three* in London often being pronounced as *free*, for example). Besides, this would be to simply substitute one typology for another. The central notion here is that organisation by a single universal typology is the closest thing to an objective approach to information management. Art Historian and Politician Horace Walpole's belief that "a society should alone pretend to publish a standard dictionary" (quoted in Reddick, 1996, p.20) is at least granted in this universal alphabetical system, to which all (literate) people have access. This objectivity is only at the macro level, of course – nobody would claim that Johnson's definition of whiteness as "the state of being white; freedom from colour; paleness; purity; cleanness" is without preference or bias – but that is a question of content, not structure.

"The alphabet" writes Zimmer (2009, p.101) "is not a natural path towards understanding things, but an arbitrary method based on the native culture's particular alphabetical ordering of letters." Escalating levels of connection creates escalating levels of organizational complexity, however, and if our objective is to build structures of knowledge then cross-reference, index, and (later) hyperlink are our best tools. Cross-referencing represents a

subtle yet powerful form of coercion; Zimmer notes that Diderot and d'Alembert relied on cross-referencing to guide readers to radical or subversive knowledge, while eluding the attention of church or state authorities who would read only the individual articles; this form of cross-referencing "subverted the rigidity of a linear reading of the *Encyclopédie*, freeing the user from the constraints of systematic organization" (2009, p.103-4).

Before moving on to look at the immediate historical circumstances that preceded hypertext, and how hypertext approached these questions of subjectivity and association, we should look at one notable attempt to employ encyclopaedic association in pursuit of objectivity, found in the work of lawyer and information theorist Paul Otlet, and its resonance with the work of engineer and inventor Vannevar Bush.

4.2.3 Genealogy of Hypertext: Otlet & Bush

In 1892, 24-year-old Paul Otlet was unhappily working as a lawyer for a family friend. A keen autodidact, Otlet was frustrated by the tendency of social scientists to obscure their key findings in long-winded essays. The resulting, subsequently reprinted work is appropriately brief, and breathlessly polemical. Otlet argues that works on social science were too often "a gathering of personal opinions based on documents collected more or less without order and method" (1990 [1892], p.11-13). This approach is contrasted with the natural sciences, in which "speculation and interpretation" are secondary to objectively presented information. In Otlet's opinion, this was due to the effective rules for registration and classification of data found in the more rigorous methodologies of the natural sciences. This rationalizing approach to presenting research findings meant that anyone could retrieve them immediately. Essays in the social sciences were too discursive for Otlet, and even summaries presented another subjective view of the work. Authors reviewing their own works tended to include "empty phrases and flattery" (p.15) while jealous annotators might incorporate their uncomplimentary (and perhaps unfounded) criticisms of a rival.

Otlet's solution was to condense research findings onto index cards, following "standardised procedures" that governed what information should be presented, and in what order (1990, p.16). This was a practice already established within libraries at the time, but Otlet, in line with other lexicographers and encyclopaedists, advocated its universal adoption. In this way the necessity of actually *reading* a legal judgement or case study in its entirety is removed, since the index cards rationalised the documents to their salient facts. Since, in Otlet's eyes, all knowledge consists of "observed facts," anything that did not fit on the cards could be

considered unnecessary subjective context. The end result would be an “artificial brain of sorts” (p.18), each card a thought linked by associative keywords to other, related thoughts; this artificial brain was a metaphor to which Otlet would later return (1990a [1936], p.391). Like a human brain, Otlet reasoned, related principles clustered together in physical categories, while indexing created links between disciplinary areas. This was an artificial brain, singular: Otlet was calling for research to become a collective project, with all individual effort building toward a shared intellectual resource. Otlet would go on to co-create the Universal Decimal Classification System (UDCS), a “document indexing language in the form of a classification scheme covering the whole universe of knowledge” (UDC Consortium 2015), and is widely regarded as one of the founders of information science.

In Otlet’s approach, however, we find a near-perfect articulation of the problematic connection between the adoption of a standard, rationalised approach, and coercion. In *Something about Bibliography*, Otlet writes that submitting all work from the social sciences to a reductive system need not mean we end up working in the intellectual equivalent of “the vast factories industry required for the production of goods” (1990, p.14), mechanically producing research according to a formula. In a later essay, however, he bemoans that “everyone has freedom to publish on any subject, in any manner, in any form, in any style” and wonders “should we not impose a doctrine of ‘moral restraint’ in the sphere of the book where an overwhelming and truly harmful proliferation is rampant?” (Otlet, 1990b [1934], p.83). Moral restraint in no way refers to the common sense of criminality; immorality (for Otlet) is linguistic profligacy, any written work that does not consent to be rationalized into index cards. If disobedient writers would not conform to the standards, Otlet warns, then responsibility for “organizing this freedom” would fall to the administrators of the system. A clerk, well versed in Otlet’s system, would strip away indulgent idiosyncrasy, rationalizing the ideas according to the standards of the UDCS (or whatever system would come to replace it). Administrator is meant literally here, much as computers were originally people who carried out calculations, but today these would be the programmers who designed such a system. Recalling Berlin’s definition of positive liberty (see 1.2.1, p.24), Otlet advocates the elision of what he considers extraneous information, rationalizing according to a universal standard that (he argues) is preferable to the proliferation promised by speculation and assertion. His system is a profound statement of positive liberty’s potential to produce order out of chaos, imposing uniformity - at the price of diversity.

The potential rewards for this restraint extended beyond merely freeing us from the tyranny of verbose academics. A staunch internationalist and joint winner of the 1913 Nobel Prize, Otlet argued that proper organization represented the ultimate recipe for world peace:

> Interdependence instead of isolation, cooperation instead of conflict, liberty instead of oppression and coercion, order and organization instead of disorder and anarchy" (Otlet, 1990c, 136).

Otlet's dream of universal intellectual regulation which transcended national boundaries raises an interesting question: is it possible to design a neutral macro level system for the structuring of knowledge, one that possesses the agnosticism of an alphabetized dictionary whilst retaining the associative connectivity of the encyclopaedia? The praxis of this could not be achieved with notecards and pens, though similar technical limitations did not stop Vannevar Bush, some fifty years later, speculating about the same grand scheme.

Following the end of WW2, during which he had been a key intermediary between the civilian scientific community and United States government, American scientist and policy advisor Vannevar Bush hoped to turn the scientific community away from building destructive weaponry, and toward something more constructive. To this end he published *As We May Think*, an influential 1945 essay in which he articulates a vision of the future in which all human knowledge is shared through a device he called a *memex*.

Bush's device was entirely theoretical, though in a tradition which includes such technologies as Herman Hollerith's machine tabulation and the logic of Otlet's *Mundaneum* (a theoretical city serving as the central repository for all human knowledge). The memex facilitated the construction of vast shared databases, administered by what Bush called "low level machines," through which science "may implement the ways in which man produces, stores, and consults the record of the race" (1945). There is no central authority in charge of this process; Bush hands responsibility for organising knowledge to the memex and its administrators. This rationalisation is, of course, in direct parallel with Otlet's notions of organisation, and the connection between Bush and Otlet has been explored in greater detail elsewhere (Wright 2014; Rayward 1994), if from a different perspective to my own. Again like Otlet, Bush positions technology as an enemy of authorial subjectivity, since there is no intrusive human governance of the system, only administration. When Vannevar Bush described his memex as "a device in which an individual stores all his books, records, and communications, and which is mechanized so that it may be consulted with exceeding speed

and flexibility" (1945), one which constitutes "a wholly new type of encyclopaedia", there is a sense both of Otlet's ambitions, and an ideological view of knowledge represented by the likes of Diderot.

Despite living in different times, Bush and Otlet share a general philosophical outlook. Historian Fred Turner references Bush's anxiety regarding "the long-term consequences of government influence on civilian research and development" and his hopes that such interference would not outlive World War II (2006, p.24), an anxiety I will underscore with two anecdotes from Bush's biography. First, despite his lifelong connection with government policy, Bush does not mention "government" once in his entire essay, instead speaking of connections between "individual members of a race". The second stems from two competing bills put before Congress in the same year that *As We May Think* was published. The Kilgore Bill called for government funding of research to be overseen by a single presidential appointee, who would act on the President's behalf and administer a Patent clause that favoured Government monopoly; the Magnuson bill called for a panel of scientists and administrators who would act independently of government control. Bush's bullish support for the latter saw the failure of both the original Kilgore bill and the hybrid Magnuson-Kilgore bill offered in its place. George Landow notes that although Bush chiefly favoured the memex's ability "to assist the researcher or knowledge worker", his ultimate goal was to "empower individual thinkers in relation to systems of information and decision" (2006, p.335).

Bush would go on to chair numerous committees whose generous funding and appointments helped support many pioneering computer scientists featured in this chapter. Among them was the 1940 appointment of his colleague and friend Norbert Wiener to the National Defence Research Committee (NDRC). It was while working on calculations for predicting the location of moving aircraft that Wiener began speculating on the relationship between the anti-aircraft gun and its target, speculation that would lead to the development of a field whose focus on the coercive potential of systems had a significant influence on key pioneers of hypertext.

4.2.4 Genealogy of Hypertext: Cybernetics

For brevity this section sticks to Weiner's definition of cybernetics, since generalising about the field quickly becomes quagmaric, especially when moving into the latter phases of the Macy Conference; see Ashby, 1964; Beer, 1966; Hayles, 1999; McCulloch 1943; Shannon & Weaver, 1963 for an overview of this period, and later Geoghegan, 2011 and LaFontaine, 2007 for a

fuller analysis of the encounter between information theory and so-called French theory. For most scholars, however, cybernetics concerns the way in which any system is controlled, with a particular interest in the impact of technology.

Consider an anti-aircraft gunner, as Weiner was asked to during World War 2: they aim at a target aircraft, the plane adjusts trajectory, the gunner adjusts their targeting, and so on. This is a circular causal relationship, in which components are responsive to one another. The title Wiener gives the study of this phenomenon – *cybernetics* – does not refer to the interaction *per se*, but to the question of control (cybernetic being Greek for *pilot*, generally meaning control or governance). Cybernetics is concerned with how such a system is organised, particularly a self-sustaining one. This approach has been used to explore relationships in both literature and computer science, as well as other disciplinary areas. German literary scholar and pillar of the preceding chapter Wolfgang Iser (1978, p.67) argues that all reading is cybernetic, since it "involves a feedback of effects and information"; as we gain information from the work we change the course of our interpretation, which in turn alters the way in which we read subsequent passages. In computing, too, we find ourselves in a cybernetic process of information and response. The user presses a key; the machine displays a character; the user responds by pressing another key. Computers can then be considered as "another form of communications apparatus" (Wiener, 1956, p.256) in which components of a system 'speak' to one another, with humans a component within that system. Wiener consequently defines cybernetics as "the scientific study of control and communication in the animal and machine" (1961, p.2), since no distinction between organic and mechanical components need be drawn.

Moving into the 1960s, and with computer systems becoming more prevalent, Wiener asked pointedly "which functions should properly be assigned to the two agencies, human and machine" (1964, p.71) when devising a new system. Given that cybernetics is about who 'steers' the system, we can see how this relates to the question of where control lies within a hypertext system. Just as the first industrial revolution saw "the devaluation of the human arm by the competition of machinery" so, Wiener argued, the computer revolution would "devalue the human brain" since computers are capable of performing many functions more efficiently (1961, p.39). Later, Wiener decides that "we have modified our environment so radically that we must now modify ourselves to live up to scale with this new environment" (1988, p.56). It becomes necessary to adapt ourselves to suit the needs of the system, an argument developed by Wiener's colleague and devotee, psychologist and computer scientist Joseph Licklider.

Licklider further pursues this cybernetic relationship between humans and machines. Having spent the 1950s working with Wiener at MIT, he joined the United States Department of Defence Advanced Research Projects Agency (DARPA), where he provided tutelage and funding to former student Douglas Engelbart and would go on to form ARPANET (arguably the precursor of the internet). In a 1960 paper on the symbiosis between man and machine, however, he identifies what he calls the "language problem": that machines and people do not share a common language with which to communicate (Licklider, 1960). His solution is that we adopt "standard formulas of representation and expression that are readily translatable into machine language," essentially returning to Wiener's pragmatic suggestion that we humans adapt to suit the needs of computers. Licklider's essay goes on to suggest what he sees as a significant difference between man and machine: that machines require detailed instructions, while humans prefer to be given a destination and work out their route.

However accurate this claim, Licklider does at least appear to be offering an empowering metaphor – humans are adaptable and imaginative, while machines require detailed instructions. In context, however, we see Licklider conclude that the user must adapt their solutions to the parameters provided by machines, since they are the ones in possession of this particular skill. The human component in this system adapts to the machine, not the other way around. A visitor to London may know where they wish to go, but fully automated ticket offices mean they must decipher the automated terminals before receiving their ticket. In this way cybernetics may be seen as advocating the omission of those elements that are too complex to translate into machine language, requiring the reduction of complex ideas at successive levels of useful abstraction.

This section overall sought to historicise the challenge of subjectivity in the designing of knowledge management systems. Sections 4.2.1 and 4.2.2 foregrounded an axis of subjectivity, represented by the dictionary and encyclopaedia, which considers the logic of association to be incompatible with a macrostructure that seeks objectivity. This incompatibility was contextualised in the 19th century work of Paul Otlet, and by early 20th century figures like Bush and the scholars of cybernetics. These later thinkers saw rationalisation as a potential solution to this incompatibility; that, by rationalising information at a metatextual level, objectivity could be maintained and diversity of content accommodated. Scholars of hypertext came to recognise these figures as early exponents of a more democratic, intertextual approach to knowledge, but their attempts to rationalise the structuring and storage of knowledge – and thereby control the

manner in which information is presented – seems to demonstrate that such organisational systems have an inevitable coercive impact on those who use them. These approaches to knowledge management required that users submit to the system in order to engage with it, ideas commonly associated with cybernetics.

Significant as these influences were, there was a final catalyst for the development of hypertext, one concerned not with information management but the wider philosophical implications of democratising social structures. Like cyberneticists and encyclopaedists, Otlet and Bush were interested in a platform that made information more accessible to others, liberating it from the restrictive and authoritative form they perceived linear print to be. These ideas found common currency in the 1960s counterculture, whose political aspirations would have a profound effect on hypertext pioneers like Douglas Engelbart and Theodor Nelson.

4.2.5 Genealogy of Hypertext: Counterculture

Describing the counterculture as giving rise to personal computing and computer networking is, as Professor Fred Turner rightly notes, to "obscures the breadth and complexity of the actual encounter between the two worlds" (2006, p.104). It is also commonplace to caricature or misrepresent the counterculture in general; cultural (mis)representation over the ensuing decades has arguably homogenised and sanitised our vision of this relatively short-lived but influential social movement. What seemed to unite these disparate groups, however, was a collective desire to break away from the repressive qualities of mainstream culture. Referencing an earlier essay, in which he sought to separate the New Communards from the New Left, Turner argues that the former should be primarily remembered for their efforts to build "alternative, egalitarian communities" rather than the hedonism with which they are perhaps more popularly associated today (p.32). Author and critic Judson Jerome suggests at one time around 750, 000 US citizens were living in over 10, 000 communes (1975, p.16-18), and it was this widespread desire to form a new, parallel society which Turner feels most exercised author, communard and counterculture visionary Stewart Brand.

Brand's dedication to the communes did not make him a communist in the loose political sense. He explicitly positions his search for "individual liberty" against the dual threats of the "Soviet Union and bureaucratic hierarchies" (Turner, 2006, p.45). This two-part rejection is important, as it maps neatly to the two flavours of liberty found in Berlin's work. Communes were arguably "negative" responses to the perceived tyranny of a society increasingly framed by positive liberty, an attempt to carve out a space in which repressive rules have no place.

Administering a new society that rejected hierarchical rule was a challenge, however, not least when it came to selecting the right tools; rejecting society, after all, meant rejecting the recommendations and guarantees it provided. Responding to this need, Brand devised the *Whole Earth Catalogue,* an inventory of recommended tools and vital skills submitted by his friends, accompanied by other articles of common interest. The *Whole Earth Catalogue* aimed to connect vendors and customers through a printed document, whose content was derived entirely from those two parties (an editorial team would work to co-ordinate the compiling of this information, a clerical equivalent of Bush's low-level machines or Google's search engine algorithm today.) Apple computing founder Steve Jobs (2005) would later describe as "Google in paperback form", a comparison and technology that harks back to Bush and Otlet's neutral administrators.

Stewart Brand's catalogue offers a prototype for the kind of knowledge management system that hypertext could offer, and his close relationship with both Engelbart and Nelson bears this out. The catalogue incorporates the same concerns about subjectivity, authority, and control that this section has already explored, along with a cyberneticists understanding of how such a system could function. In a 2001 interview, Brand described the philosophy behind the *Whole Earth Catalog*: "What you're trying to do is nourish and design an organism which can learn and stay alive while it's learning… Once that process has its stride, don't tinker with it, let it work for you" (Turner, 2006, p.90). The first edition was organised into seven categories that Brand considered worthy of inclusion, a selection process that he openly acknowledged as undemocratic (though not, crucially, as problematic). These initial conditions, of course, came to define the way in which the system functioned, much as Diderot's encyclopaedia evidences his ideological position.

Brand was helping to lay down "boundary conditions for a self-governing system", in Turner's words, making it "the socio-technical equivalent of a homeostat" (2006, p.146). It should come as no surprise that Brand was influenced by the writings of Norbert Weiner, and would subsequently find inspiration in Marshall McLuhan, his co-resident at the Libre commune. Writing in 1964, McLuhan argues that "with electricity we extend our central [nervous] system globally, instantly interrelating every human experience" (p.358). The global reach of electronics appears to offer the potential for a global consciousness. Commenting some forty years later, professor and author Paul Levinson (a student of McLuhan's) suggested in a memorial essay to his former tutor, "we can start in the digital age with an ethical imperative that control of

information by disparate individuals is better than its control by central authorities" (1999, p.200). This in fact represents a rather naïve mischaracterisation of McLuhan, who was more ambivalent to the effect of distributing control via technology:

> The threat of Stalin or Hitler was external. The electric technology is within the gates … [and] I am in the position of Louis Pasteur telling doctors that their greatest enemy was quite invisible, and quite unrecognised by them. (McLuhan, 1964, p.18).

I am reminded of Brand's concerns about bureaucracy and communism, making the *Whole Earth Catalog* founder's assumed optimism surrounding new technology more ambiguous. McLuhan's concern, one that this thesis shares, is that in equating the network ideology too readily with liberty, we fail to recognise its inherent subjectivity. In removing the subjectivity of the author, a new and invisible subjectivity intrudes, one based on a reductive approach to knowledge born of its very structure. The ostensibly neutral conditions which hypertext creates for users are restrictive, in line with the language adopted by figures discussed above.

This section sought to foreground key influences on the development of hypertext. A central theme that emerged from this survey of earlier information management systems and theories was that of regulation; how ostensibly neutral approaches could evidence the philosophical outlook of a system's designer. This fundamental concern arises when we turn to the genesis and development of hypertext itself.

4.3 Hypertext

The first recorded use of the word hypertext (albeit hyphenated) appears in an article reporting Ted Nelson's 1965 lecture *Computers, Creativity and the Nature of the Written Word*. Attempting to explain the potential of this new approach, Nelson first describes the problem of organizing materials into a coherent piece of writing, arguing that we tend to think not in linear sequences but in "swirls and footnotes" (Wedeles 1965). David Kolb elsewhere describes writing in similar terms, as the first step in thought "losing control and gaining control" (1994, p.326). Losing control because writing takes those ideas out of their original lived context, and gaining control because we can begin the process of artificially structuring abstract thought. In allowing discrete passages to be cross-referenced in real time, Nelson suggested, the computer would let academic papers evolve more organically than they would in the pages of a notebook. This cross-referencing could also be a social project, to which other researchers contribute their own connections.

This shared web of interconnected knowledge echoes many features both of the memex and Otlet's earlier systems, being a collective endeavour that could in turn eliminate the technical challenges of information retrieval and locating obscure sources. Writing in 1974, in a work heavily influenced by the layout of Brand's *Whole Earth Catalogue*, Nelson described computers as "versatile gizmos which may be turned to any purpose, in any style" (2003, p.304). Echoing Bush's low-level machines capable of fulfilling any demand, Nelson suggested that computers could function as obedient intermediaries for communication. Rather than the structure of a book, which implied that knowledge was best conveyed both mono-directionally and bound within static pages, the computer would permit the creation of a shared and living network of human knowledge. This approach would in turn negate the subjective qualities that so exercised Otlet, and was prevalent in the encyclopaedic approach. In order to achieve this ambition, it would be necessary for all works to be dynamically interlinked, and it was to this end that Nelson clarified hypertext as "a combination of natural language text with the computer's capacity for interactive branching" (1967). Rather than the printed work, in which readers progress from page to page in linear fashion, hypertext allowed readers to move between pages almost seamlessly, inspiring Nelson's later, simpler definition of hypertext as "non-sequential writing" (1993). Like Brand's catalogue or Otlet's index cards, in theory hypertext promised a medium that facilitated the acquisition of knowledge in a non-linear fashion, removing some of the mechanical advantage authors previously possessed for guiding the reader.

While Nelson defined the initial qualities of hypertext, he was less successful in its implementation. It was another pioneering computer scientist, Douglas Engelbart, who would devise the tool itself.[12] In 1962, having developed a dozen patents whilst working for five years at the Stanford Research Institute in California, Engelbart submitted a report to the Air Force Office of Scientific Research in which he outlined the case for (and a prototype of) a functional hypertext system. This early prototype is intriguing: index cards were filed first in thematic bundles, and then alphabetically, with links included on the cards themselves. To aid in this process, ideas were reduced to brief statements, to better facilitate this communication.

So far we might almost be describing Otlet's system, but Engelbart goes further. "Just as with the statements within an argument," he writes in the same paper, "the conceptual

[12] While Nelson and Andries van Dam's Hypertext Editing System (HES) technically precedes Engelbart's implementation by one year, Engelbart's oN-Line System (NLS) saw initial development in 1962, and became the basis for the influential File Retrieval and Editing System (FRESS) subsequently developed at Brown university.

relationship among the words of a sentence is not generally serial". This is to say, the individual clauses within a sentence can have a myriad of associations. Take Engelbart's own statement given above: to fully understand the argument a reader would need to analyse not simply the sentence but also the meaning of *conceptual*, *relationship*, *serial,* and so on. Individual words should be seen as "independent non-serial symbol-structuring forms", to borrow Engelbart's description, which could be isolated from the flow of the sentence, permitting each word to be expanded into a wider network of meaning.

In keeping with the cybernetics of his tutor and sponsor Joseph Licklider, Engelbart's report speaks of "developing means to augment the human intellect … [and] help man apply his native sensory, mental, and motor capabilities". This determinism also shares qualities with McLuhan's seminal work *Understanding Media*, with its provocative subtitle *The Extension of Man*. Engelbart goes on to speak of computers as "clerks", helpers whose job is to assist the user. This characterisation of the benign computer recalls Bush's army of low-level machines, affiliated lexicographers and encyclopaedists, and the filing clerks of Otlet's card system. Significantly, Engelbart (1962) speculates that in such a networked system "no-one can dominate the show," since nobody has overriding control over the system of communication – all users, here described with the cyberneticist's term "nodes", are connected to one another equally.[13]

By permitting readers to encounter ideas in an order that they (at least partially) choose, it is suggested that the author's power as a persuasive agent will be partially dissipated. The link is there to be considered (not necessarily to be followed); the link is one path among many. It was on this feature that later theorists of literary hypertext would focus, ignoring the collaborative qualities of hypertext arguably intended to be its defining feature (see Sections **Error! Reference source not found.** and 5.4). Engelbart's report also makes numerous references to the value of self-organising, self-facilitating networks of individuals, echoing his engagement with countercultural politics and Stewart Brand in particular. Both had been residents of the Libre commune of New Mexico and Hog Farm, California, where Brand introduced the former to his friend Marshall McLuhan (Turner, 2010, p.110). In 1968, Brand also

[13] It is interesting that the word *node* is used here to describe connected users, where elsewhere it is used to describe individual lexia. This should emphasise that Engelbart is discussing the components, human or otherwise, as equal parts of a wider system.

assisted Engelbart in the so-called “Mother Of All Tech Demos”, which showcased many prototypical modern computing components including the mouse and monitor.

Any genealogy reliant on the frictionless transmission of countercultural ideologies to computer technologies runs the risk of what social historian E. P. Thompson elsewhere calls “the enormous condescension of posterity” (1980, p. 12), as the more complex elements of this relationship are ignored, but there was certainly significant social interaction between the two. We see the impact of the counterculture in Ted Nelson’s wider concern that computers were becoming the preserve of a powerful technocratic elite, designing computer systems that restricted the freedom of their users. This concern is most clearly expressed in the early pages of his 1974 call to arms *Computer/Lib*:

> I have an axe to grind: I want to see computers useful to individuals, and the sooner the better, without necessary *[sic]* complication or human servility being required. Anyone who agrees with these principles is on my side, and anyone who does not, is not.
>
> THIS BOOK IS FOR PERSONAL FREEDOM, AND AGAINST RESTRICTION AND COERCION.
>
> That’s really all it’s about. Many people, for reasons of their own, enjoy and believe in restricting and coercing people: the reader may decide whether he is for or against this principle.
>
> A chant you can take to the streets:
>
> COMPUTER POWER TO THE PEOPLE!
> DOWN WITH CYBERCRUD!”
>
> (Nelson, 1974, p.3).

Nelson here sets up two factions: those who wish to design computer systems that enhance individual freedom, and those designing systems that curtail that freedom. In keeping with both 1960s computer science pioneers and the prevailing American counterculture, Nelson favours the former. It should be noted, however, that Nelson recognised such systems could equally be used to exert power and influence in the opposite direction. Engelbart’s relationship to the question of centralisation is similarly complex. Following his remarkable success in the 1960s, Engelbart struggled to establish a networked vision of computing against the more popular approach of individual workstations. His belief in centralisation and central administration alienated him from his colleagues, who were resistant to the idea of regulated control from a central authority (Terranova, 2009, p.244).

Nelson and Engelbart draw together ideas explored in the previous section. Hypertext ostensibly imposes neither subjective (as in the case of the encyclopaedia) or objective knowledge structures (in the sense of a dictionary). Instead it seeks to democratise knowledge organisation and retrieval, by creating a system that allows all participants to contribute as

equals. Landow, for example, considers “full” hypertext an ideal method for redressing the disassociation of alphabetization, arguing that customised word lists allowed scholars to “investigate particularly thorny problems in dating, attribution, stylistic development, and translation” (2006, p.10). Thematic and contextual links are permitted to evolve organically through the project, rather than being imposed by an administrator. Nelson and Engelbart are focused on the ability of computers to perform trivial indexing tasks that allow the writer to access and organise information easily, but the index itself is an ongoing project. Hypertext is seen as a way to create personally meaningful connections between concepts, a way to index human knowledge.

This is the theory. In practice it proved hard to resist the urge to impose meaning on these links and lexia. Both Engelbart and Nelson argued that hypertext should offer specific genre of links, such as tables of content, and a brief look at Nelson’s illustrative diagram of a hypertext system shows that he was as interested in nodes as structural lists as he was in the content itself:

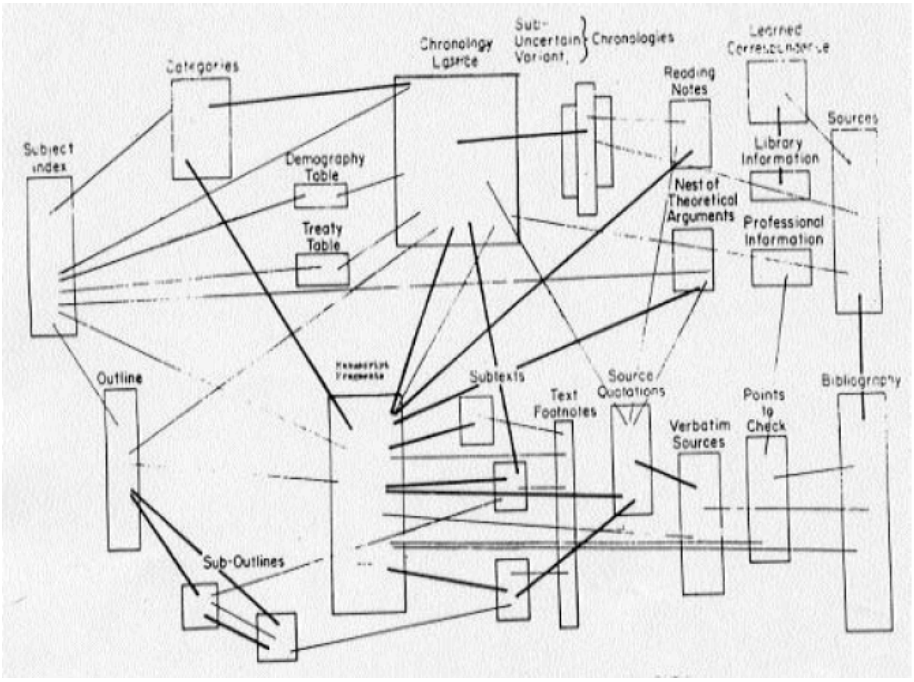

Figure 7: Ted Nelson’s visual map of a hypertext system (Nelson, 1965, p.100)

Knowledge, Nelson continues, can be regulated using a tripartite structure: *entries*, discrete units of information; *links*, connections between entries; *lists*, ordered sets of information. This system, Nelson argued, would have no hierarchy save that which the user created. As he puts it in his later work *Computer/Lib:*

> Imagine a new libertarian literature with alternative explanations so that anyone can choose the pathway or approach that best suits him or her; with ideas accessible and interesting to everyone, so that a new richness and freedom can come to the human experience; imagine a rebirth of literacy. (Nelson, 1987, p.1/4)

What this approach does, however, is force the user to divide ideas into discrete sections, connecting these principles in a way that may appear artificial. Are two ideas connected at an equally significant level? Is a connection positive or negative? Is it there to be explored later or as a reminder? However flexible Nelson's structure appears, it cannot accommodate the ambiguities of annotation and evaluation. Discussing the experience of converting his book *Hypertext* from a printed volume, George Landow noted two primary differences in writing for hypertext web: the system's ability to "link a single passage in a particular text" to other lexia, and "the tendency of any lexia, even a converted endnote, to become equal in importance to the block of text to which it refers" (1994, p.15). Having attempted a full conversion to hypertext, Landow felt free to incorporate not merely a table of contents, but overviews for both hypertext and critical theory, a feature that his original printed work did not include. This attempt to resolve the complexity that a hypertext document creates simply adds an additional coercive layer to the work, an additional metatextual level of organization that is not present in a linear academic work. This approach is more in keeping with Otlet's index cards, since the metadata contain only a small number of categories, though restrictive metadata doesn't necessarily impose itself on the content.

Hypertext pioneer Randall Trigg and computer scientist Mark Weiser's 1986 hypertext system *Textnet* shares much in common with this philosophy. In the opening paragraphs of their paper they offer a succinct summary of their intentions:

> In order to take fullest advantage of the computer's capabilities, we envision authors composing pools of text able to be organized and interconnected according to the tastes and interests of both author and reader. The computerized paper network would keep track of such pools of text and aid users in augmenting and manipulating them. (Trigg & Weiser, 1986, p.2)

The language echoes Nelson's obedient machines and the cross-referenced index cards of Engelbart, along with the language of augmentation found in that latter's 1962 paper for the Air Force. Trigg and Weiser offer a rather different approach to the structuring of this data, however. Concerned that existing hypertext systems were still too chaotic for use by researchers and academics, they instead begin by offering improved versions of the hypertext object. Each "digital index card" (what we would call lexia) was given one of two functions: a *chunk*, which contained descriptive metadata about the piece of information; and tables of

contents (*toc*), which could be used to "oversee many chunks" (Trigg and Weiser, 1986, p.6) by listing them in a simple index.

Further standardising influence is found by looking at their approach to the hyperlink. Concerned that users would be forced to infer the connection between chunks, Trigg and Weiser instead suggested that the meaning of links should be regulated, just as nodes were. They began with the suggestion that there are only three ways to follow a hyperlink: following an author's train of thought, the dominant mode; *side trips*, in which tangential but not essential information is referenced, often to contextually educate the ill-informed reader; *forks*, where an argument splits in multiple directions (Trigg and Weiser, 1986, p.5-6). They go on to suggest that all links be classified along similar lines: *Summary, Argument-by-Analogy, Example*, and *Continuation*, with subcategories offered for each. Commentary would be similarly labelled as *Criticism*, *Environment-Vacuum*, *Argument-Immaterial*, and *Style-Incoherent*. In doing this, much of the messy human element of writing could be elided, as Otlet had desired, with knowledge structured into convenient categories.[14]

This standardising impulse is reasonably widespread. It can be found in Ted Nelson's revised conclusion that there are only three types of basic relationship between information: "*origin,* the parts where elements begin; *commonality,* the sharing of elements between units; and *links*, which mark, annotate and connect portions of units" (Nelson, 1993 [1981], p.6). Later, Paul Kahn (1995, p.222) suggests there are just *two* kinds of association: *objective*, which derives from the text as data; and *subjective*, which derives from the interpretation of that material. Unless the connection contains nothing but clarifying data, this approach argues, it must *de facto* be subjective. Later still, Harries *et al.* write with evident frustration that links within one discipline were "different in character" to those within another (2004, p.436), thwarting efforts to create standardised reference databases. "Perhaps the best that can be hoped for," they conclude, disillusioned, "is a general overview of citer motivations" (p.441) – the opposite goal to Galison's contact languages from Chapter 1.

Describing previous encyclopaedic attempts to reduce knowledge to basic data elements, Trigg and Weiser argued that their system would at last "reduce redundancy" (1986, p.18) by condensing information to its simplest form. Trigg had already offered a taxonomy of

[14] This approach is parodied by Shakespeare, who has Polonius list various long-winded and supposedly encompassing forms of drama: " tragedy, comedy, history, pastoral, pastoral-comical, historical-pastoral, tragical-historical, tragical-comical-historical-pastoral, scene individable, or poem unlimited."

link types in his PhD Thesis (1983), which holds the honour of being the first published entirely on the subject of hypertext. He would go on to work at Xerox PARC, and in 1984 steered the development of the hugely successful Xerox *NoteCards* system. For whatever reason, Landow's book does not acknowledge the standardizing approach found in Trigg & Weiser's work, or the earlier works by Nelson and Engelbart. "By abandoning the table-of-contents or list mode that characterizes page-bound, printed text," he argues (2006, p.92), "one liberates hypermedia from the restrictions of print", despite this being an approach commonly advocated for hypertext as a medium.

Perhaps aware that their reductive approach might be controversial, Trigg and Weiser added that "a further discussion of link types is beyond the scope of this paper" (1986, p.6) before moving on to other matters. This point is worth reiterating, however, as it is central to our wider argument. Trigg and Weiser are framing their tables and structures as liberating, arguing that selection of the best out-link is left to "the interests and expertise of the reader". When Trigg and Weiser seek to standardise the link, however, they are imposing their own logic on the work, however open that structure may appear to be. Trigg and Weiser are sacrificing chaotic diversity for orderly neatness, in turn imposing subjectivity onto the hyperlink. While their argument pertains primarily to metadata, classifying arguments in such a specific way invites comparisons to the subjective claims of Diderot. In seeking to make their system universal, they sacrifice the diversity that alternate systems could permit.

This standardising instinct is not universal, however. An alternative approach to both the list function and the wider philosophical implications of the link/node paradigm can be found in 1990s discussions of what has been called *open hypermedia*.

Three years after the publication of Trigg & Weiser's paper, a contractor at CERN proposed a hypertext system that for many would become the *defacto* standard.[15] In his original proposal, which (significantly) arose out of a workshop on standardisation for large-scale research projects, Tim Berners-Lee advocated a universal linked information system, in which "generality and portability" are more important than "fancy graphics techniques and complex extra facilities" (1990). Despite this, HTML posed a significant problem for contemporary researchers. HTML embedded its linking structure into the document itself, meaning each page

[15] Despite knowing its provenance in Nelson's work, Professor of Creative Writing Spencer Jordan defines general hypertext as "any document written using hypertext markup language (HTML) and then accessed through a web browser" (2014, p.326).

contained its own bespoke hyperlinks. Not only did this represent a significant work commitment for any researcher seeking to integrate their work into such a system, it also presented substantial issues for interoperability. "The experience that most other hypertext systems provide" writes Wendy Hall and her collaborators "is in the realm of individual documents or local document collections with a controlled environment and context". Despite extending the "node addressing scheme" to allow both remote nodes and a means to extend hypertext "across a network", argues Wendy Hall and her fellow researchers, the world wide web (then in its relative infancy) had retained "the node and links model of these traditional closed hypertext system" (1995). Web browsers had to be custom made to interpret these files, and integrating existing applications meant altering them to use HTML as its basic data model format (Wiil 1997). Such closed hypermedia systems were therefore characterized by a closed set of data model formats and applications; an open hypermedia system, by the opposite.

To fully understand the implications of this approach we may turn to consider Southampton University's *MicroCosm* project. Created in response to what the research group called "major problems… causing a barrier to the growth and development of hypermedia applications" (Fountain *et al.,* 1990, p.1), *Microcosm* sought to resolve some of these issues by adopting and implementing open hypermedia principles. To these researchers, proprietary document formats and software slowed the integration of documents into hypertext, made worse by read-only media that demanded links be permanently embedded into documents (p.3-4). Their solution was to store links in a separate database, which they called a *linkbase*. Rather than embedding links into the document, as HTML did, *MicroCosm* maintained a separate database in which these links were stored. Imagine introducing an essay on Roland Barthes to the *MicroCosm* system - a linear document that mentions the Sorbonne, Jean-Paul Sartre and Semiotics. Independently, some previous scholar had located relevant material and tagged it in the linkbase: video footage of Sartre, say, or an extensive article on Semiotics. Your newly integrated document on Roland Barthes would have immediate access to these related concepts or ideas, without the necessity of manually creating links.

MicroCosm has the significant advantage of placing emphasis on the associations between documents, rather than the documents themselves – no need to create hyperlinks yourself, since a vast database of familiar and unfamiliar material is immediately available. "

The MicroCosm philosophy" writes the authors "is that hypermedia links in themselves are a valuable store of information" (p.4) which should be seen as meaning-conveying outside the specific document into which they are placed – and to an extent beyond the control of the author.

The challenge, of course, lay in upscaling this approach. The linkbase was supposed to be regularly updated and maintained - curated, in other words - while filtering tools would be in place to winnow out associations considered too divergent for the general user. Without this curation, passing the cursor over Sartre would bring up an overwhelming list of associations, with no simple method of indexing or searching The most common link type in *Microcosm* is still the generic link, which "allows the author to associate a document with any occurrence of a particular textual string in any document". The video of Jean-Paul Sartre, for example, might be associated with both the philosopher's name, continental philosophy, existentialism, or whatever other term the author considers significant. Hall likens this to a text retrieval operation in reverse: "a generic link defines a collection of applicable sources, whereas a text retrieval operation describes a collection of applicable destinations" (1995). This reverses the traditional authoring paradigm, asking not where the current node might lead, but what might lead to the current node.

This curatorial aspect introduces some interesting questions about authorship. The initial contributor, identifying key words and phrases, is determining what they consider to be the relevant connections: a playful scholar might tag footage of Paul de Man with the term *fascist* or *collaborator,* Satre with *football.* Whose responsibility is it to undermine this connection? It is again the invisible administrators, the curators who will remove inappropriate or misleading connections, though responsibility does admittedly also reside with the user. As Hall concludes, "the onus is on the user to interrogate the system," and while she intends this in the sense of requesting further data, it might easily refer to the increased vigilance of the user when pursuing potentially distorting hypermedia connections. Nonetheless the open hypermedia approach, with its quasi-objective lists and connectivity by design, represents a potential creative avenue without the coercive potential of traditional link-node hypertext, which makes its relative anonymity compared with its more successful counterpart. Open hypermedia systems represent an approach to hypertext that emphasises structure whilst simultaneously moving it (to an extent) outside the control of the author.

The above section outlined some of the ways in which previous knowledge systems and a prevailing culture (cybernetic, countercultural, ostensibly anti-hierarchical) merged to create a philosophy of hypertext somewhat recognisable today: collaborative; linkable at the level of individual words, with each word capable of sustaining multiple links, but requiring *toc* to make this possible; with links which carry clear and unambiguous meanings. Where clarity competed with diversity, the tendency was towards rationalization: a limited set of categories, a specific mode of address. These are the characteristics that leant hypertext its potential to dispense with hierarchies, but this process created a logic of thoughtful rationalisation which collapses the *diversity* of this information. This philosophical process of thoughtful rationalisation will be the focus of the following section.

4.3.1 Hypertext: A Language of Rationalisation

The Book of Genesis sees the Christian God observing humanity engaged in the collective enterprise of a tower to Heaven. This achievement triggers in the Deity an almighty bout of anxiety:

> And the Lord said, "Indeed the people are one and they all have one language, and this is what they begin to do; now nothing that they propose to do will be withheld from them. (Genesis 11:6)

His solution is the confusion of tongues, condemning the builders to a multitude of languages that thwarts their collective project.

In 1946, at the first Macy Conference on cybernetics, Professor Jerome Wiesner invoked the Babel metaphor to contrast the confusion arising from interdisciplinary research with the affordances of cybernetics.[16] Citing the prodigious output of his peers, Bush (1945) similarly argued in favour of a simplified "universal language" which would better align human communication with new epistemic technologies, much as Otlet hoped to condense human knowledge onto index cards. In his proposal for a hypertext system Engelbart suggested that by training humans in a "universal symbol structure," data could be stored within hypertext systems in a simplified form via a set of "standard translation rules" (1962). Engelbart even named his proposed hypertext system HLAMT, standing (rather clumsily) for *Human using Language, Artefacts, and Methodology, in which he is Trained*. This approach emphasises the adaptation of humans to suit the new system, not the other way around. In the same article that coined

[16] Mireille Rosello offers a more paranoid version of this metaphor. She conjures a scenario in which "hypertext becomes dominant and one realizes that one has lost the opportunity to contribute the growing hypertextual corpus, the unfinished or unbegun "Tower of Babel" (1994, p.152).

hypertext as a term, Nelson argues that the universal language of computing is limited only by "the ingenuity of the programmer" (Wedeles, 1965) once the barrier of linguistic diversity is superseded, later advocating for "a simple and generalized building-block structure, user-oriented and wholly general-purpose" (Nelson, 1967, p.84). Hypertext has been discussed above and elsewhere as a cure for the Babel curse, a new universal language to support our collective endeavours.

The first chapter of this thesis introduced the Sapir/Whorf hypothesis, which argues (in its simplest form) that language can define a worldview (see Section 1.2.5). This approach has resonance with notions of universality, since hypertext represents a framework that might control how users perceive the experiential world of the computer. In his 1962 report, Engelbart goes so far as to call his proposed hypertext system "Neo-Whorfian", its change to how we communicate bringing about a new "way of thinking". Over several paragraphs he describes the changes to human nature precipitated by the introduction of computing to the communication process, seemingly unaware of how coercive such a system would be for the users themselves. The hyperlink, for example, offers a means by which a single passage might be connected to any number of other, associated ideas. "Readers will turn to the Web for information" writes Jay Bolter (2001 p.96) "and if they cannot find it there and are not willing to look elsewhere, then cyberspace may become by default the universal book, encyclopaedia, and library all in one." The potential scale of associations from a single passage encourages the user to accept what they have read for practical reasons, before setting forth into the wilderness once more. If we stray from Engelbart's vision to the web as it currently exists, hypertext as we experience it on the World Wide Web does not permit users to annotate or author hyperlinks as a defacto standard; HTML, for example, is assumed to be an authoring language first.

The influence of both Engelbart and Whorf can be found in an early work by George Landow and Paul Delany, which mentions in passing that "… the textual structures that have evolved over the centuries *determine* thought almost as powerfully as the primal structure that shapes all expression, language" (Landow & Delany, 1995, p.3) We also see Engelbart's thesis in contemporary HTML. American English, for example, forms the grammatical backbone of the mark-up system: *align='centre'*, for example, will not validate (a particular spelling of *center* is required). Similarly, HTML is read into the browser from top-left to bottom-right, the same directionality recognisable from Western writings. Whether operating under the auspices of

browser manufacturers, of academics, or of government employees, these contributions to the collective language of HTML change what users are subsequently capable of achieving.

This is a question that extends beyond hypertext, of course. The North American bias is particularly troublesome within Unicode, the computer industry standard for the representation of written text. Modern Chinese, Japanese, and Korean typefaces use regional or historical variants of similar characters, but the Han Unification Project is an on-going effort to standardise these variants into single characters (Unicode Standard, 2016, p.678). This approach consciously obliterates geographic variants in favour of a standard. On the Unicode website, we find a headline statement of intent: “Unicode provides a unique number for every character, no matter what the platform, no matter what the program, no matter what the language.” Once again, we see thoughtful rationalization presented as a necessary part of effectively structuring knowledge. In this respect markup has more in common with constructed languages like Esperanto.

Constructed languages like Esperanto have a long history; Comenius, Descartes, and Leibniz were all interested in devising a universal auxiliary language, while Large (1985) suggested that several hundred constructed languages had been devised since the early 17th century. For more on the general history of constructed languages see Couturat and Leau (1903); Knowlson (1975); Tonkin (1979). Like hypertext, Esperanto was envisaged (in the words of Professor John Edwards) as a “neutral [language] … that would facilitate global communication” (2002, p.44); see Tim Berners-Lee’ original proposal: “To publish information for global distribution, one needs a universally understood language, a kind of publishing mother tongue that all computers may potentially understand” (1990). To achieve this, however, Esperanto’s rules have remained largely unchanged since their development by founder L.L. Zamenhoff. Changes are approved (rarely) by an elected board; as a result, Esperanto has changed little since the 1905 *Declaration of Boulogne,* which made all terms in the earlier *Foundations of Esperanto* binding (though the vocabulary has expanded considerably).

In practice, of course, Esperanto cannot be neutral: being predominantly derived from European roots, for example, it is extremely difficult for native Asian speakers to master Esperanto, while feminist linguists may find the default masculine gender similarly troublesome. Standardisation rarely suggests neutrality; it means instead the conscious collapsing of diversity. While Esperanto and markup are dissimilar in use, both languages are better candidates for the strong Whorfian hypothesis than languages that develop organically, since

the constructed nature of each grants them significant coercive potential over their users. HTML is updated periodically by a 396-strong working group, under the auspices of the W3, in conjunction with the Web Hypertext Application Technology Working Group (WHATWG). The latter organisation, who represent the interests of browser manufacturers, arguably have even greater control over the process, since they determine the extent to which different markup will function within their particular environments. Running the text alone of John Perry Barlow's *Declaration of Independence of Cyberspace* through the W3's own validator reports seventeen errors and five warnings (as of April 2018) and the relative severity of such issues remain outside the control of anybody without a significant voice on these committees.

Debate around the so-called Semantic Web illustrates this apparently benign process of rational standardisation. A W3C project, the Semantic Web sought to provide "a common framework that allows data to be shared and reused across application, enterprise, and community boundaries" (W3.org, 2001). This would allow different applications to be more granular in its treatment of information, since it could guarantee that data with the <author> property would contain certain universal attributes. Using semantic principles under the Resource Description Framework (RDF) devised as part of the W3C's Semantic Web Activity, <si:author>John Smith</si:author> will identify John Smith as the author of the document. This framework is not intended to be viewed by a user; the write-up on the W3C's site describes its three principles as follows:

> Web information has exact meaning
> Web information can be understood and processed by computers
> Computers can integrate information from the web (W3.org, 2001)

Berners-Lee acknowledges that the semantic web remains "largely unrealized" (Shadbolt *et al.,* 2006, p.96), with attention now shifting to the idea of linked data. This related project, however, uses the same underlying logic: that data has a Unique Resource Identifier (URI) which allows it to be identifiable to software applications, but that this information should not be displayed to users. The chaotic diversity of unique tags is standardised into those that make information more readily connectable within the system, much as search engines use latent semantic indexing to automatically determine the relationship between terms and content.

The labelling of data in a way that makes it easier for browsers to identify its nature has many valuable applications, but requires the rationalizing of diverse information into categories. Allowing people to label links containing music must either accommodate all potential synonyms

(beats, tunes, strain, theme etc.) or impose a single, standard term. In advocacy of their more descriptive linking structure, Trigg and Weiser suggested that descriptive links allow readers to extract meaning "from the relationships between chunks (small pieces of text) rather than from the words making them up" (1986, p.2). This, however, further shifts responsibility for the interpretation of an argument away from the user, and onto the authors themselves. What term is best to describe music? Rather than a didactic process of discerning meaning, the connection is established within the system via one of the limited parameters it provides.

If your purpose is didactic, of course, then this approach (while intellectually stifling) is not intrinsically problematic. Those seeking to retrieve information from a system *benefit* from a restrictive structure that, while permitting some latitude in navigation, is ultimately one designed to permit a more interactive learning experience. George Landow notes the advantage of clearly labeling links, arguing that they "offer a generalized kind of previewing that aids reader comfort and helps in navigating information space" (2006, p.19). In a recent effort to understand hypertext readability, researchers Aristidis Protopsaltis and Vassiliki Bouki (2010) suggested that readers developed a "mixed review" strategy, wherein they would consider the available link and choose the one which best aligned with their interests. This becomes simpler the clearer the link's purpose becomes; this approach is most successful, therefore, where users are cast as novices on a framed research task, as opposed to an expert in pursuit of knowledge for their own purposes.

George Landow's book outlines a related study, in which users were asked to retrieve information from stand-alone, read-only hypertext system *Intermedia.* Unlike many other systems at the time, *Intermedia* had no internal search function, meaning that navigation took place entirely via hyperlinks. This study found that novice users were more successful at retrieving data than expert users. Expectation of fuller features "served to hinder rather than to assist" (2006, p.149), with the experts less able to pursue contextual clues offered by the author than the novice. This study raises a number of questions. Firstly, we may ask how this observation sits with Landow's earlier argument that expert users of hypertext do not find the experience as "paralyzing" (p.146) as novice users. Secondly, we may in turn ask what purpose these tools serve. A user interface should be both familiar, but also flexible enough to accommodate our demands (Yankelovich, Meyrowitz & van Dam, 1985, p.76). Suggesting that thwarted expectations are a failing of the user seems unfair; instead, we should ask what purpose this study serves.

More importantly, however, this study suggests that Landow does not really see the system as a tool for the reader. Expert users, denied the interface tools they normally use, find it difficult to abandon such mechanical modes of navigation in favour of contextual clues. Novice users, by contrast, don't know what they are missing, instead relying on "the stylistic and other author-created devices" that experts ignored. Expert users "implicitly made the assumption that the system, rather than the author, does most of the work" (p.150). In an earlier passage, however, Landow argued that both hypertext and literary theory configure "the author of the text as the text" (p.127). Readers are therefore in constant tension with the author, whether materially (where the author determines the limitations of the system, which thwarts experts) or conceptually (where the reader must pursue the author's path, which bewilders novices.) In neither situation is the reader in a position of power; instead they are the student in an asymmetric educational environment.

Linear print, it should be noted, does not disadvantage the expert in this way, binding them to some arbitrary framework. Some twenty pages earlier, Landow himself noted that experts have been jumping back and forth within the work "since we have had indicies" (p.129), and that linear reading is a "pious fiction" even without an index. Competent readers will flick back and forth through a work with no supportive paratextual apparatus at all. In this context, suggesting the expert computer users should surrender to the author's prescriptive paths seems oddly contradictory. Philosopher Richard Holton suggests that an expert is one who "just know[s] what to do" (2006, p.3) based on prior knowledge. The greater the level of access an expert has, the more they can do with the material. Artificially restricting the affordances of a hypertext system and praising it as liberating for the reader seems oxymoronic.

Non-literary hypertext positions the hyperlink as agnostic (or independent) to the ideas themselves. A link may join supporting or contradictory evidence, since links convey only one meaning: that the creator considers these areas to be connected in some respect, semantically guaranteeing only a "connection between source and target" (Mazzali Lurati, 2007, p.139). This agnosticism is part of the hyperlink's apparently universal utility, rendering it a positivist, rationalist assertion in the Enlightenment tradition. "Entering the [hypertext] web", argues Terence Harpold (1995, p.176), "requires a confidence in a myth that presumes connections can be made between dismembered portions of a corpus that are, on an elementary level, disjointed." In describing how hypertext functions, Nelson calls it a "structure [for] ideas" (2003), with each lexia representing an idea and the links the ligaments between them. This attitude is

echoed in the language of hyperlinks as footnotes, labels, and connections. The hyperlink in these circumstances therefore loses its potency, since its purpose is simply to join two existing areas of knowledge. Consider this example:

> **Hypertext** is text displayed on a computer display or other electronic devices with references (hyperlinks) to other text which the reader can immediately access, or where text can be revealed progressively at multiple levels of detail (also called StretchText). (Wikimedia Foundation, 2015)

There is no reason that a subsequent editor might not add a link from "reader" to its respective article on Wikipedia, or that somebody else might consider *StretchText* too specific for a general introduction. Crucially this is not an issue in a collaborative and didactic hypertext system as above, since the intention is to critically evaluate the connection between these areas of knowledge. Landow offers an anecdotal example, in which he observes a colleague working on a hypertext document about nuclear disarmament. "Immediately recognising that I could provide valuable information for my students by simply linking to lexias in this other web, I did so" (1994, p. 37)**.** This note illustrates a problematic, pseudo-hierarchical aspect of hyperlinking, which contradicts its affordance of interpretative freedom. Landow perceives a connection and makes it explicit; subsequent users pursue this argument preferentially, since it carries authorial weight. Perceived correspondence between these connected ideas undermines the perceptions of a user, since their connections do not have the material validation of a hyperlink's concrete underline. Landow optimistically discusses the likely (or perhaps unlikely) behaviour of a student in a hypertext web. "Students can enter the massive hypermedia web from various points" within which they encounter both the usual information and material of additional interest; science experiments could be included "warts and all", including those which yielded no useful data (1994, p.30). While this may be valuable in theory, for the time-pressed student the duty of sifting through this material is likely to take away from the value of placing a simple core of data in its proper context, and an amusing aside for the academic may be mistakenly treated as central to the argument.

This approach also fails to develop critical skills in readers, since they are engaged not in their own research, but in discerning somebody else's intent. Making context so readily available means that "readers consult definitions far more frequently" than readers of other reference works (Landow, 1994, p.18), but these are hand-picked and preferential. Hyperlinks are intrusive, as evidenced by Landow's keenness to make them more explicit, more standardised than the library system. This relationship with knowledge is the reason that no

‘antilink’ exists, by which users may mark those links that they consider irrelevant. All hyperlinks are relevant; all connections demand consideration. In the first chapter I discussed Heidigger’s argument that terms that are too loaded with ideological meaning should be presented with a strikethrough, denoting that this is the best term language provides, but that it should be read critically. Perhaps the underscore that generically identifies hyperlinks should be treated in the same way; the strikethrough at the heart of the system.

Hyperlinks inevitably become a secondary level of knowledge, privileged above the surrounding written material. Comparing the editorial process of constructing book chapters, Landow argues that a hypertext environment would have removed “the need to maintain a linear thrust” (2006, p.132) and permitted him to be less selective about the material he included. My earlier discussion of interdisciplinary creativity foregrounded that diversity and creativity were intrinsically connected, placed in opposition to the linear essay. “Like the novel,” writes Aldous Huxley (2002, p.330), “the essay is a literary device for saying almost everything about almost anything. By tradition, almost by definition, the essay is a short piece, and it is therefore impossible to give all things full play within the limits of a single essay”. I am reminded of the letter sent by actress Beatrice Campbell to George Bernard Shaw bemoaning his loquaciousness: “Oh dear me — it’s too late to do anything but accept you and love you — but when you were quite a little boy, somebody ought to have said "hush" just once!” (Dent, 1952, p.52). An essay should be limited in scope, permitting the reader space both to interpret and investigate; as Landow himself noted, had he believed his remarks were important to his argument, he would have included them. Hypertext offers the space to indulge minor or undeveloped arguments that a linear format cannot permit.

Landow argues that selection cuts off the potential affordances of the work, where hypertext allows a work to expand to the author’s full satisfaction. What is the practical upshot of this? Does Landow anticipate that the reader will skim read Foucault’s notoriously dense prose every time it is referred to? More likely the reader will simply take his word for it, perhaps embarrassed at their lack of prior knowledge. This is the outcome anticipated by Yankelovich *et al.* (1985, p.55), who argue that in hypertext “readers are not obliged to search through library stacks to look up referenced books and articles; they can quickly follow trails of footnotes without losing their original context”. In contrast, Marielle Rosello notes the disorientation of dropping a reader into another self-contained document without context (1994, p.140) rather than the more elegant structure of a quote within an essay. This is likely to create, she suggests

two pages later, a “magnetic” effect: both works are “configured to seduce the screener (the ex-reader) to finish the piece” rather than switch back and forth. Her conclusion is that we will be drawn to the work with the greatest critical cachet, much as the time-pressed literature professor will scan a student essay for their chosen sources and ignore the rest of the material. David Kolb (1994, p.328) is similarly sceptical, concerned that exposure will result in “intellectual laziness” as the reader simply assumes that the author knows what they’re talking about.

Heim is similarly ambivalent about the impact on electronic textuality on the writer. The word processor, he argues, removes “the blockage” caused by anxiety about how text will appear, suggesting that electronic text has the same monolithic presence as typeset (1987, p. 153-54). At the same time, writers find themselves connected to a wider shared network that dwarfs their own works (p.215). Hypertext systems were, after all, originally proposed as living documents, in which users could “tear [information] apart, establish our own definitions and substitute, restructure, append notes” (Engelbart 1962). Hypertext systems are designed to permit this interconnectivity of information.

Landow (2006, p.7) references Harold Bloom on the parallel notion of *influence anxiety*, in turn suggesting that literary scholarship is to an extent defined by challenging earlier authors in a tradition. It is by this appeal to (and criticism of) authority that we make our own claim to knowledge. To challenge an argument, however, we must be certain of its terms. How are we to engage in acts of *clinamen* or *tesserae,* the swerving away from or challenging of an author’s position, when that position has not been fully articulated? What prevents an academic from claiming that within the galaxy of unread hyperlink is contained every possible rebuttal? It is not sufficient for the reader to have partially formulated their criticism, since the intentional object (Crane, 2001) of that criticism, present in the mind of the reader but not necessarily in reality, cannot exist until the essay is concluded. Counterarguments exist in this quantum state until the reader has completed their thesis, at which the scope of an argument is known.

Hypertext’s web of signifiers are a *set* of intentional objects, however, a network of potential responses that may or may not challenge the reader’s understanding of the work. Subsequent research (Amadieu et al, 2010; Saadé and Otrakji, 2007; Zhang and Wang, 2010) supports this criticism, that learners find seeking information in hypertext confusing. This is a clear articulation of what Conklin (1987, p.40) called the *disorientation problem*: “the problem of knowing (1) where you are in the network and (2) how to get to some other place that you know (or think) exists in the network”. Faced with the challenge of orientating themselves within a

network, learners fall back on methodical, exhaustive mapping of the overarching structure (Last, O'Donnell and Kelly, 2001) while experts will bypass the system in pursuit of their preferred ideas (MacGregor, 1999; Mishra and Yadav, 2006), finding the system itself merely a barrier to this process.

The preceding paragraphs present a vision of hypertext that is about expediency, simplifying the acquisition of knowledge through reductionism. The presentation of a hypertext network to a user (one for whom knowledge of hypertext systems is considered demonstratively disadvantageous) permits them to explore this space. The directive nature of hyperlinks and the expansive (perhaps overwhelming) amount of material, however, encourages them to pursue a course sanctioned by the author, but in the knowledge that the author has seen further than they ever could.

With this in mind, consider again Landow's proposed conversion of his linear print work into a complete hypertext system. Some readers, he coyly suggested, might be troubled by this proposition, since in doing so the author has "sacrificed a certain amount of authorial control, ceding some of it to the reader" (2006, p.135). In my opinion this approach is far more akin to the lecture of my nightmares: rambling, digressive, and without structure, with references to works and academics which may be of no relevance at all. Kolb suggests hypertext webs as "the functional equivalent of writing without self-discipline" (1994, p.328), publishing notes, drafts and partially developed ideas. Worse, it may encourage the reckless inclusion of underdeveloped ideas whose non-existent deeper meanings the reader falsely infers. This, in turn, would encourage "wandering commentary, endless qualifications, fruitless self-reflection, unnecessary contentiousness" and all the other things that Otlet railed against in the previous section.

This section framed rationalisation in terms of constructed languages, arguing that rationalising the capabilities of a particular language creates an environment in which novice-like submission to its symbolic structures is the preferred navigational strategy. The following section will pursue this latter argument in more detail, discussing the way in which the conditions established by hypertext systems generate and enforce certain modes of behaviour.

4.3.2 Hypertext: A Language of Control

Any hypertext system that comes with pre-existing lexia still seems to privileges the author, since these ideas (and any hyperlinks which come with them) frame the argument for the reader. In his book on the connections between counterculture and cyberculture, Fred Turner

coins the term *network forum*, describing it as “a place where members of these [counterculture] communities came together, exchanged ideas and legitimacy, and in the process synthesized new intellectual frameworks and new social networks” (2006, p.72). This is, crucially, an exchange of ideas, something that any system with an absent author cannot achieve (or at least achieves no better than in a linear printed work). Hypertext reference systems are intended to be organic and collaborative, developed by a group over time. New links may be made by the multiple users of the hypertext system, allowing individual subjectivities to contribute to a collective body of knowledge. Thus, in most descriptions of hypertext systems, the computer is positioned as an information space to which users contribute on an equal footing. Engelbart imagines an office with no manager; Bush imagines a workstation that connects only to other workstations; Licklider imagines a self-regulating cybernetic system. This collaborative outlook is true of most hypertext systems: Carmody *et al.* saw managing multiple simultaneous users as the priority for their 1967 Hypertext Editing System.

Influential French philosopher Gilles Deleuze (a keen influence on both Alexander Galloway and the theorists found in the following chapter) explained the distinction between discipline and control by similarly turning to the highway metaphor: we are free to drive where we please, assuming we follow the rules (1998, p.18). Our driving behaviour is *controlled* by the rules of the road, with the *disciplinary* threat of, say, having your vehicle impounded. Mark-up is not deterministic, but relativistic; it influences and shapes discourse. Mark-up offers even greater potential to control behaviour than protocol, since the latter can dictate only whether the message is received or not; mark-up and the browser that responds to (or ignores) that markup shapes presentation, how the message appears. Were we to ask Engelbart or Nelson, however, it seems safe to assume they would consider hypertext a tool of negative liberty, since it is designed with the intention of freeing the written word from the authoritative medium of the book or report; certainly their political outlook and writings as explored above suggest this is the case. In pursuing a logic of rational standardisation, materials that diverge most significantly from the vision of a system’s designer are likely to suffer most.

This notion of universality sets hypertext systems against relativism, in turn implying that its approach to epistemology is comparatively neutral. Rather than the conscious subjectivity of the encyclopaedia, here we have a real claim of universality. This universality, however, comes at the price of standardisation and the collapsing of diversity. Professor Nathan Ensmenger (2010, p.13) is right to argue that any technical innovator (a category in which he

privileges computer scientists) also “invents the kind of people they expect to use their innovations", since they make assumptions about function and usage which in turn shape the behaviour of users. In an interesting (but almost certainly co-incidental) slip of the tongue during his famous 1968 demonstration, Engelbart describes the computer as instantly responsible (rather than responsive), while his promise of “view control” for the reader hinges on their ability to apply “any one of a large number of parameters” in controlling the layout of their document. However, these parameters are based on the existing paratextual or formatting marks to which the handwritten work had access, including italics, parentheses etc. – absent those too complicated to warrant implementation at the time. These parameters are *defacto* restrictions on how documents may be displayed, and that these parameters have expanded since Engelbart’s tech demo does not invalidate the criticism that these are reductive rather than extensive tools for presentation. Henry Ford famously offered customers any colour of vehicle “so long as it was black” (quoted in Duncan, 2011, p.11). While initially available in a number of colours, quick-drying paint was only available in black. The same logic (technological limitation framing choice) seems applicable here. It is worth remembering that *parameters* literally refer to rules or limits that control what can and cannot be done. Any system that demands standardisation inevitably imposes the consequences of this standardisation on those who would use such a system – recall how critical Landow was of “expert users” who sought to use systems in ways not envisioned by the authors of that content.

Hypertext is primarily a system for the structuring and organization of information, establishing concrete connections between areas of knowledge. It demands a binary state of connected or unconnected, states suitable for any information system; even where systems offer conditional hyperlinks, the difference is only that the reader is unaware of this state – a form of unconscious vs. conscious connectedness. Google (2015) describes its mission as being “to organise the world’s information and make it universally accessible and useful”, a logic product of this approach. Density of links becomes the *de facto* standard for measuring importance. As of January 2018 the Wikipedia article on the geographic coordinate systems was the most linked-to on the site; by contrast, there were 131, 727 orphaned articles. Clearly, then, one is more likely to stumble upon the former than any of the latter, and while one could argue that this is not the fault of the links themselves, it is the hypertext system that allows such

a state to occur. A linear document does not permit these clusters of focus,[17] and well connected does not necessarily mean widely respected or even intrinsically valuable to an argument, just as connected does not necessarily mean strongly connected or connected at the same level as other concepts and areas.

"Retweets are not endorsements" we are told, but the boost which Twitter users see when their tweets are linked by popular accounts demonstrates the power of this centrality. The myriad uncertainties of research can lead us to seek safety in numbers, which means well connected lexia gain better linkage the more they are encountered. Quantity of links comes to be used as *de facto* evidence of relevance; a significant difference between an index and a hyperlinked document, and one that highlights the potential power of the latter.

This question of reductionism and its consequences can be explored by bringing in systems theorist Nick Luhmann. Following a brief period spent at Harvard (during which he, together with Ted Nelson, studied sociology under Bush's life-long rival Talcott Parsons) Luhmann returned to Germany to work on his version of systems theory. A system, he argued, is defined by the boundary between an infinitely complex exterior environment and the structured communication within (Luhmann, 1995, p.22). Take the legal system: a court does not take into account all information potentially relevant to the case. Instead, it is selective of those elements that are significant (in the technical sense of signifying or meaning something) and relevant to the case. These may be practical omissions, such as how frequently the defendant eats Sugar Puffs, or ideological ones, like their social standing. This reduction of complexity is based on evaluating how meaningful a particular piece of information is, but it is the question of *significance* that is so problematic. A judge with conservative leanings may determine that the defendant's poverty has no bearing; a left-leaning judge may choose to take it into account.

In my opinion Luhmann's approach (though not explicitly related to hypertext) provides helpful context for looking at the dangers of reductivism. Any attempt to determine what is and is not relevant runs the risk of excluding information or arguments that may be germane. Luhmann concurs that no attempt to model natural phenomena (like the creation of mental connections during a writing process, for example) can be truly objective, since it must always

[17] The board game Linknotize relies on this idea, with players attempting to navigate from one article to another by the shortest route possible. The skill derives from the ability to identify articles that are likely to have extensive links.

take into account the observer themselves (2004, p.17). In other words, it is impossible to build a system without taking into account the prejudices of its designer.

It is unfortunate, then, that hypertext as a system is reliant on precisely this process, since it requires the reduction of the complex relationships between knowledge into a literal, physical link between elements. Hypertext is considered by some to be a “model of thought” (see Section 2.2), but how thought is defined falls to the designer of conventional link-node hypertext systems, who see connections exist at a fundamentally binary level. Hunter S. Thompson (2012, p.161) recounts the (probably apocryphal) story about Lyndon B. Johnson’s campaign manager. Asked by his candidate to accuse their rival of fornicating with pigs, the campaign manager refuses, arguing that it isn’t true. "Of course it’s not," Johnson is alleged to have said. "But let’s make the bastard deny it". True or not, this story illustrates an issue with the supposedly neutral hyperlink. At its most basic, the link carries a binary meaning - connected or not, associated or not – which does not echo our own mental structure.[18]

If we introduce a limited taxonomy of hyperlinks – as Trigg *et al* suggest above – then (as already argued) we are permitting additional control over the system. The purest, most open-to-interpretation hyperlink therefore concretises connections at only one level. This approach does not mirror human thought, however, whereby connections are at a range of entirely subjective and personal levels. As illustration, which of the following do you associate with the word cat: *Ears, Tail, Unix*? Each has an association (Cat is the concatenate and list function in the Unix operating system) but they are not similar in nature. In a wider sense, different users may link a Wikipedia article on Che Guevara to others on revolutionaries, genocide, or cults. Each link carries equal weight and validity, leaving the reader to determine the significance or value of each connection. Within the ostensibly neutral hypertext system, all knowledge connections must be treated as equally valid.

The experience of making connections between abstract notions is simulated through the hyperlink, reducing the complexity of an oblique connection to a literal and instantiated one. In March 2017, Google hired 10,000 independent contractors to meticulously drive sites denying the holocaust off its front page, contractors who were given guidelines for determining the intent of the original searcher, and of the person whose site is returned in the search results (Hern,

[18] This binary character is undermined by the existence of guard fields or dynamic links (see Section 6.1) which introduces the secondary category of “potentially linked”. I would argue that there still exists a fundamental state of unlinked versus linked, whether or not the reader can immediately access this connection.

2017). Previously, it had been white supremacist organization *Stormfront* who had returned the top result – largely because theirs was the best connected page as pertains to this question. The struggle to keep this site 'below the fold' in Google's results is ongoing and fractious. Relying on a single mechanism for conveying meaning can clearly result in well-connected being equated with accurate or correct, depending on the motives of the community of users.

Is the binary nature of the traditional hyperlink a problem? Not if your purpose is staunchly didactic, where curated connections are intended to convey meaning; here the challenge is to ensure that the correct meaning is conveyed. Disappointed in the versions of hypertext he saw being developed, Nelson used his various (and variably successful) tech demos over the 1970s to 1990s to foreground where he felt their implementations were going wrong. His platform *Xanadu*, for example, carries one affordance that Nelson felt to be essential for any democratic hypertext system: *transpointing,* by which users link not to a generalized passage of text, but to a specific point within another document. While this is not a feature of HTML, the most familiar model of hypertext, it certainly perpetuates the idea of hyperlinks as directive of attention, an idea that Landow (2006, p.15) similarly corroborates: "by bringing readers to a clearly defined point in a text, one enables them to perceive immediately the reason for a link and hence to grasp the relation between two lexias or portions of them". While there may be disagreement on how it should be implemented, hyperlinks are generally held to be directive of attention. This should hardly be a surprise, since Nelson intended hyperlinks to function in this manner – his original paper suggested that hypertext was a medium suited to either "instruction or entertainment" (1965), focused on transmission of meaning. Hyperlinks connote their own "optimal relevance", foregrounding their their importance to the "development of the text" (Pajares Tosca, 2000, p.80). Tosca does not consider this to be an *interruption* to the flow of meaning; by contrast, the hyperlink "enlivens" the work, injecting additional meaning into the written material. In a knowledge system this is valuable, since the reader is seeking relevant and resonant information.

Concerned that hyperlinks could still connote importance without adequate justificatory context, Nelson was at pains to emphasise that users may employ an unlimited number of content categories under which ideas can be filed. Nonetheless, this is an imposition of a structured approach where previously no such structure existed, and Nelson himself demonstrates that there will always be competing notions of universal utility. Whilst demonstrating his proposed ZigZag database structure, for example, he complained that "the

computer field is accustomed to falsely imposing hierarchy and falsely imposing orderliness and regularity on what is not orderly and regular" (Nelson, 2008). In an earlier demonstration of his Xanadu project he criticises the World Wide Web Consortium[19] (W3C) for advocating "one-way links, links that break (no guaranteed long-term publishing), no way to publish comments, no version management, no rights management" (Nelson, 1998). Posted a decade apart, these two quotes exemplify the cognitive dissonance in devising the parameters for technology-mediated communication. On the one hand Nelson wants a system that does not impose order or regularity upon the user; on the other he criticises the W3C for its lack of order in permitting links to simply 'die,' removing the versioning that is (albeit clumsily) handled by the provision of an in-system error message.

Like the memex, Engelbart's word processor, or the Dewey Decimal library classification system, hypertext's structure is intended as a neutral way to structure content. Melvil Dewey himself, however, was asked to resign from several positions thanks to his anti-Semitic views, and his original system assigned 88 categories for Christian literature and just one for Jewish and Islamic works; similarly (though less egregiously), hypertext systems bear the conscious or unconscious preferences of their creators. Ted Nelson considered the absence of adequate rights management a failing of HTML, while Professors Ross Anderson (2003) and Lawrence Lessig (2004, p.204) consider this a strength; Tim Berners-Lee himself was instrumental in seeing digital rights management incorporated into HTML5, despite vocally resisting its presence in the preceding four versions. The initial implementation of HTML5 was advocated by the Web Hypertext Application Technology Working Group (WHATWG), a group founded by Apple, Opera Software, and the Mozilla foundation as direct opponents to the W3C. In his famous tech demo, Engelbart cites the potential for constant surveillance as a strength of networked computer systems, which does not sit comfortably with contemporary anxieties about government intrusion online. The antonym of standard is not chaos but diversity, as Galloway implies (2004, p.169), and the fury with which Nelson discusses contemporary web standards illustrates that the way in which information is presented can be both ambiguous and controversial.[20]

[19] The W3C are an international standards organisation founded by Sir Tim Berners-Lee to develop standards for the World Wide Web

[20] Though this may be sour grapes at the rejection of his more heavyweight, less 'broken' innovations.

Personal philosophy can fundamentally alter the mode of hypertext favoured by the designer of a specific system. Despite what his political leanings may imply, Nelson is conservative of traditional relationships between author and reader – certainly more so than Engelbart was. In addition to privileging the authorial process in his original definitions of hypertext, Nelson repudiates the "raw, chaotic" nature of the world wide web (1999) and advocates for copyright protections in hypertext systems. His own proposed system does permit the user to create comments, but requires the web's original author to validate it. George Landow is similarly in favour of such copyright laws (2001, p.198) while Silvio Gaggi is largely against them (1997, p.108). While their proposals differ in other ways, Berners-Lee and Nelson both reject the advantages of the library system. Libraries permit the preservation of multiple versions of a work, like time capsules retaining what writers actually thought or understood.

The above examples are editorial decisions being made at the system design level, establishing the conditions under which subsequent users must operate when using these systems. In a 1994 episode of satirical spoof news programme *The Day Today*, a caricature of Sinn Fein leader Gerry Adams is made to deliver an interview after inhaling helium; an action which, while not altering the *content* of his words, imposes a restriction which alters the audience reaction to his comments. When an infuriated Steve Coogan (replete with Adams' beard and accent) squeaks "you're making me very angry!" the content of his words lose all power to intimidate, since the medium within which they are conveyed is so preposterous.

In his authoritative history of the American hippy communes, counterculture archivist Richard Fairfield identifies the absence of rules as the principle cause of their inevitable collapse (1972, p.294). It was not exclusively the absence itself that caused the problem, he argued, but the authority derived by those who chose to fill this vacuum. Fred Turner makes the similar observation that to survive, "communities needed structures of governance and structured ways of making a living" —the very institutional elements of social life that many New Communalists had hoped to avoid (2006, p.119). The absence of these structures results in the emergence of a dominant voice, one who subsequently makes the rules. In her influential essay on power relations within radical feminist collectives, Jo Freeman argues that any group of people "will inevitably structure itself in some fashion" (2004, p.16), and that a *laissez-faire* attitude to organization acts as a "smokescreen" for the strong or the lucky to "establish unquestioned hegemony over others". By 1967, Turner points out, women within the New Left were beginning to claim power within the political sphere. By contrast, their counterparts in New

Communalism often "recreated the conservative gender, class, and race relations of cold war America," in which major administrative or organisational decisions were taken exclusively by men while (as Brand's wife Lois Jennings recalls) "women put the Clorox in the water to keep everyone from getting sick" (Turner, 2006, p.76). Turner notes the absence of women's issues from the *Whole Earth Catalog* (tacitly assuming, of course, that all universal issues fell within the male domain). When issues specifically addressed to women did find their way into its pages, the framing frequently undermined them. A 1971 review of the Boston Women's Health Collective's *Women and Their Bodies*, for example, ran alongside two pictures: "one of a naked young woman on her back, seen from three or four feet above, and the other, a close up of a child latched onto a young mother's breast" (p.98); the illustrative extract chosen by Brand was a long passage about female masturbation, thereby further narrowing the lens of women's health to the bounds of sexuality. This is a question of content, of course, but even at the organisational level this coercive influence can be felt, as we can see in Brand's 1980s attempt to integrate his *Whole Earth Network* with emerging computer technologies.

Following the demise of the *Whole Earth Catalog*, computer systems entrepreneur Larry Brilliant approached Brand with a proposition. Rejecting Brilliant's original notion of uploading the catalogue's archive for discussion, Brand instead argued that the users should be able to create their own topics. The arrangement was mutually beneficial: Turner concludes that while Brilliant got a ready-made community and financial stake, Brand "hoped to allow the system's users to converse with one another, and to market that conversation back to its participants" (2006, p.142). "You own your own words" goes Brand's slogan, a statement of ownership both possessive and connoting responsibility (recalling questions of authorship and authority; see 3.1). It is worth noting Brand's entrepreneurial guile here, a trait that again separates his own brand of communalism from the narrow historical perception of the hippy movement as anti-mercantile.

Based on Murray Turoff's Electronic Information Exchange System (EIES), the Whole Earth 'Lectronic Link (or WELL) was a bulletin board system, but its logic echoes the concerns around hypertext, connectivity, and the user, as expressed in this chapter. Echoing the structure of the *Whole Earth Catalog*, the WELL represented multiple overlapping communities "governed in a non-hierarchical manner" (Turner, 2006, p.143). Non-hierarchical to a point, of course: the underlying system, the technological artefacts that made up the WELL system, remained outside the control of the users. It was possible to remove a post from your own screen, for

example, but not from the screens of other users; personal posts could be entirely erased, but not edited. Nevertheless the intention was that, rather than "assert their authority directly," users would be granted the power of "self-rule" (Turner, 2006, p.145). Interestingly, Charles Ess argues that a democratic hypertext would not be the "expansive system" imagined by Nelson and Bolter, but a more granular system facilitating discussion amongst its users. These discussions would agree, "by way of the same form of discourse, upon different norms, and thereby preserve individual and cultural differences" (Ess, 1994, p.251). Such an effort would, however, be contrary to the language of universality (*ergo* standardisation) that has been the dominant philosophy up to this point.

Nonetheless the WELL became a key social network for Bay area engineers who saw it as "not simply a computer conferencing system but a way to recreate the countercultural ideal" (Turner, 2006, pp.141-42). Synthesising numerous interviews with founders and administrators, Turner concludes that the WELL's managers were (borrowing Brand's term) "as gods". These new Olympians spent their time "designing that world, channelling its disembodied energies through talk, creating settings in which individuals could simultaneously build their new community and transform themselves by using a new set of digital 'tools' to which the WELL had given them access" (Turner, 2006, p.148). This new Eden (to borrow a common name for communes of the 1960s) has in common with its predecessor a paradoxical notion of freedom born of rules. Like the logic of Berlin's positive liberty, permitted actions are bound by rules. These rules are established by administrators, who determine what constitutes freedom: determining *freedom to*, in Berlin's phrasing. Describing Brand's subsequent work in bringing the network ideology to businesses, Turner describes how these workshops mirrored the logic of the WELL:

> a network entrepreneur (often Brand himself) gathered members of multiple communities within a single material or textual space. The members of those networks collaborated on the various projects at hand and developed a shared language for their work. (Turner, 2006, p.6)

Chapter 1 introduced the idea of *contact languages*, an anti-reductive approach that allows scientists to share ideas without diluting the nuance of their own distinct disciplinary dialect. This model is a parallel to Brand's technique; in both cases, rules emerged which governed how communication took place, but without the need to reduce the complexity of that encounter. Crucially – and in contrast with the potential affordances of networked computer systems –

these encounters permitted the negotiation of a language and rules that were not restricted by technological processes.

Hypertext as a medium arguably typifies the benign impositions of universal structures. Keen to reject the monolinear and authoritative nature of contemporary print works, Nelson calls for a new form of non-sequential writing. In order to do this, one or more individuals have to devise the code that will underpin this system, defining the parameters of this new language. Rather than creating a space in which anything is permitted, this manifestation of the use-concept of liberty results in a more restrictive discursive space, one defined by rules devised by a central authority.

The idea that computer code could operate as a neutral agent for communication, thereby removing the need for a centralising authority, seems naïve. Yes, the computer is concerned only with presenting the symbols it is given, according to the rules it has received – in that respect it is agnostic to content. However, these rules are the product of a programmer's efforts to standardise communication, hopefully ensuring that what a designer and subsequent author inputs is echoed in its output. Jo Freeman would caution us against any community that claimed to operate without rules. The elision or substitution of certain mark-up options alters the mode of writing; consider the Japanese kanji characters that Unicode simply prevents from rendering, for example, a text encoding issue that is echoed in their absence from HTML. When an interpolating layer is added into the communications process – whether mark-up or protocol– that layer restricts the manner in which communication can take place. Certainly the option exists to author one's own system, as Nelson attempted to do; this new system, however, will inevitably reflect its designer's own prejudice or preference (since it was precisely this which motivated them to reject existing standards in the first place). What is more, such an undertaking is beyond the capabilities or interest of most users, who will instead equate 'standard' with 'universal' and come to see HTML, for example, as the de facto language of both web authoring, and the web as the defacto medium of publication. This argument reminds me superficially of the free schools argument; that those who do not like how the existing school systems functions should simply build, fund and staff their own school.

In her description of the way in which social groups function, Jo Freeman (2004, p.16) argued that a structured group "always has a formal structure, and may also have an informal one", while an unstructured group "always has an informal, or covert, structure. It is this informal structure … which forms the basis for elites". In linear print, in which there is no ambiguity in this

contract, there is no pretence that the medium is structureless. Similarly, the role of hypertext is to “impose structures” on published material (Delany & Landow, 1995, p.43) and so long as we acknowledge this coercive structure (and make no pretence that hypertext offers an alternative) then we can consider how this structure impacts upon our usage of it. It is only when we claim this structure is neutral that we encounter an issue. David Miall (1998) acknowledges that by breaking works up into lexia, “control shifts to hypertext as a system” but suggests the provision of an index or site map ameliorates this issue. Control is not relinquished by making that control explicit, however. Describing the problem of disorientation in a hypertext, Conklin notes while linear print documents can be disorienting, the reader has only two options: “he can search for the desired text earlier in the text or later in the text” (1987, p.40). This language is telling – a network for Conklin is something from which the reader is not released, where the solution to the reader predicament must rest within the network.

Two philosophical propositions seem to emerge in the above evaluation of hypertext: first, that knowledge should be connected and interrelated in a meaningful way; secondly, that this connectivity requires the rationalisation of complex natural processes to conform to the system in which they will be contained. This approach is in keeping with historical knowledge systems: the dictionary sought to rationalise variant spellings and organise its content in a seemingly neutral way; the encyclopaedia demonstrates how competing epistemologies can approach a universal system of knowledge in different ways and in a system designed to be didactic, this is entirely desirable. Tilottama Rajan, Research Chair at the University of Western Ottowa, writes that like universities, encyclopaedia try to both accommodate and organise a “multiplicity of knowledges” with the goal being “to organize rather than simply to provide an inventory” (2007, p.335). Rajan goes on to suggest that the encyclopaedia came to be seen as a system that “stored rather than synthesized knowledge” and thus “inscribed a conception of knowledge as information or technology rather than philosophy”. Where hypertext is distinctly different, however, is in the focus on personally relevant connections over a faux universality. Hypertext accommodates a subjective way of understanding interrelationship: the linking of textual units with other textual units in a way whose meaning can be inferred by reference to the connected nodes.

Charles Taylor describes the two steps leading from negative to positive conceptions of freedom: the first moves us from freedom as “doing what one wants” to doing what we “really” want, while the second introduces “some doctrine” purporting to show that we cannot do what

we really want, or follow our real will, outside of “a society of a certain canonical form” (1985. p.217). Obviously Taylor is speaking in political terms, but it is hopefully not too grand a leap to say at the very least that the rhetoric of computer technology follows this two-step path. “No-one can dominate the show,” Engelbart claims above, before explaining precisely what the user is permitted to do. Engelbart’s parameters are an exercise in positive liberty, since they define the range of what can be produced onscreen. Taking Galloway’s earlier analogy of protocol as the rules of the road, we can see that protocol appears to be an assertion of positive liberty - failure to follow the correct rules will result in either packet loss (the information not reaching its destination) or a mistranslation error, depending on whether the issue stems from protocol (which carries the message) or markup (which structures the message itself).

Since medium cannot be considered a neutral agent in the transmission of meaning, the wildly different implementations of the hypertext concept offered by computing pioneers like Engelbart, Nelson, Andy van Dam, and Tim Berners-Lee represent demonstrably different experiences for the user. This complex relationship between subjective contents and ostensibly objective systems persists in contemporary platforms that build on the hypertext paradigm.

4.4 Beyond Hypertext

In November 1994 Microsoft launched its second global advertising campaign with the slogan “Where do you want to go today?” Devised by advertising agency Wieden+Kennedy, the campaign sought to shift attention away from the computer as a device, and onto the liberating potential it afforded the user. "We want to take away any sense of mystery and replace it with a sense of discovery,” said then-corporate marketing director Liz King (1994). This shift of emphasis was, for King, underpinned by an ideology of user empowerment, which she clarifies in the following terms: "People change the world. All we can do is provide them with the best, most liberating tools for them to do what they want to”. A little less than a year later (and with Microsoft executive vice president Steve Ballmer acknowledging that response to the previous campaign had been “chilly”) Wieden+Kennedy abandoned the slogan in favour of a new commercial set to the tune of the Rolling Stones’ *Start Me Up*. This choice of song embodies an imperative statement that both anthropomorphizes and empowers the machine, in stark contrast to the promise of individual liberation implicit in “Where do you want to go today?” Given the rarity and scale of Microsoft’s marketing exercises, it is fair to infer that the lukewarm reception this campaign received was a surprise to Microsoft’s programmer directors, especially since the

identification between software and liberation was both widely held and strongly felt - at least within the California-based IT start-up community of the mid-1990s.

Numerous sources (Barlow, 1996; Rheingold, 2000; Doherty, 2004; Chun, 2006; Turner, 2006; Castells, 2012; Fuchs, 2013) acknowledge both favourably and unfavourably what academics Richard Barbrook and Andy Cameron call "the free-wheeling [yet] entrepreneurial faith in the emancipatory power of technology" (1996) found in the 1990s San Francisco-based tech community.[21] This prevailing cultural attitude has its roots in the Bay Area counterculture of the late 1960s, when the New Communards dreamed of creating a space free from the prohibitions of government censorship, a space perhaps more easily realized in a virtual environment than a physical one. This correspondence between the social ideals of the 1960s American Counterculture and the development of hypertext has already been discussed; the following section looks at how these ideals and values evolved over the ensuing decades.

Following two years spent travelling in India and experimenting with LSD in the company of Timothy Leary, political activist, poet and future Electronic Frontiers Foundation[22] co-founder John Perry Barlow settled on a ranch, where he continued to contribute lyrics to his old friend Bob Weir's band *The Grateful Dead.* The ranch operated in some respects as a continuation of his commune lifestyle, employing friends and former members of the counterculture. During his two decades spent in animal husbandry, Barlow came to see internet communities like *The WELL* as true manifestations of the countercultural ideal, culminating in a 1996 essay posted from Davos, Switzerland. Addressed to the governments of the world on behalf of web users everywhere, Barlow's essay declares that, in the global communications space created by the Internet, traditional governance was not simply unwelcome, it was unenforceable. On behalf of all Internet users Barlow asserts "you have no sovereignty where we gather" (Barlow, 1996). He goes on to describe cyberspace pointedly as "**a** [*emphasis from original*] civilisation of the Mind in Cyberspace," a global community unfettered by government intrusion, and one echoing the language of figures like Otlet and Bush. Barlow scorns governments for not understanding "the unwritten codes that already provide our society more

[21] Contemporary criticism of Barbrook and Cameron focused on the politics of its authors: Wired founder and libertarian Louis Rossetti called it an "utterly laughable Marxist/Fabian kneejerk;" author John Barker questioned their praise of the French government-supported system MiniTel. The founding idea – that technology has the fundamental power to liberate– seems to have gone largely unquestioned, with the focus instead on the role the government might play in this liberating process.

[22] The Electronic Frontiers Foundation provides financial support for litigation against government and corporate intrusion into the affairs of internet users, in addition to raising awareness through (for example) the Chilling Effects database.

order than could be obtained by any of your impositions," assuring them that communication in cyberspace consists of "thought itself". The implication that machines would provide a means of communication less restrictive than the written word is oxymoronically paralleled with a suggestion that this communication is patterned by a set of unwritten codes, which may be considered synonymous with Engelbart's earlier talk of written parameters and the various forms of invisible assistant identified across this chapter. MIT Media Lab and Wired co-founder Nicholas Negroponte (1995, p.182) argued that in the future the internet would "flatten organizations, globalize society, decentralize control, and help harmonize people", a powerful manifestation of supposedly benign administrators.

This argument appears to be quintessential praxis: the ideals of the counterculture seeing their practical application in the digital environment. Speaking just under a decade later, however, Barlow described his subsequent career spent battling relentless government intrusion into cyberspace, before remarking ruefully of his former writings "we all get older and smarter" (quoted in Doherty, 2004). The paradoxical technocratic notion of liberty as derivable from the substitution of traditional authority for the regulatory framework of a computer system is a constant from the 1980s Bay Area to the modern day. In the opening paragraph of *The Californian Ideology*, Barbrook and Cameron refer to the potential of new technology to "diversify and intensify the creative powers of human labour," specifically by "transforming the way we work, play and live together" (1996). This Engelbertian statement also echoes Bush's techno-utopianism, Barlow's call to arms, and McLuhan's vision of a global village. Barbrook and Cameron, however, frame this idea quite differently, prefacing the above by assigning motivation for this change to "capitalism's relentless drive." Technology forms part of a new model for exploiting human labour, one similarly noted by other, later scholars (Lazzarato, 2006, p.135; Terranova, 2000).

It is with this hybrid of socially progressive attitudes borne of the New Communard movement and a faith in the free market that Barbrook and Cameron are concerned, and evidence of this dissonant philosophy is not hard to find. Turner argues that in their rejection of political agnosticism in favour of entrepreneurial technology, "the communards of the 1960s developed a utopian vision that was in many ways quite congenial to the insurgent Republicans of the 1990s" (2006, p.8), focussing as it did on individual merit and an anti-regulatory approach to labour. Moving out of the communes, Stewart Brand had co-founded the Global Business

Network, with the intention of bringing his theories about connectivity and the global community to the oil and pharmaceutical industries.

This cultural affiliation between the commune and Silicon Valley may be demonstrated through the biography of Stewart Butterfield, who shares more than a nominal connection with the other Stewart of this chapter. Raised on a commune before majoring in Philosophy, Butterfield was working on a doomed, dialogue-heavy video game when he realised that one of the tools they had developed might have a wider social function. This would become *Flickr*, a community-building image-sharing platform which some credit with rejuvenating the fortunes of Silicon Valley. His current project is *Slack*, another communications platform which draws in communication from across social media and beyond into one application. Sociologist and UX researcher Leah Reich, who works on the theory underpinning Slack, commented that "[e]mail is hierarchical and compartmentalized, and great for political manoeuvring" (Kiss, 2016). Slack, they argue, removes this hierarchical aspect, a nod to Engelbart's ambitions.

Speaking at a Lincoln Labs conference in July 2014, Republican senator and then potential 2016 presidential candidate Rand Paul told a packed ballroom "use your ingenuity, use your big head to think of solutions the marketplace can figure out, that the idiots and trolls in Washington will never come up with." Further examples of this entrepreneurial libertarian ethos are not hard to find. Uber founder Travis Kalanick is an outspoken critic of public carriage laws that restrict his business, and bore the cover of Russian-American novelist and philosopher Ayn Rand's *The Fountainhead* as his twitter avatar; Rand, the creator of the dubious anti-altruistic, individualist Objectivist philosophy, remains a significant influence on the Libertarian movement in the US. eBay founder and chairman Pierre Omidyar is a major contributor to the *Institute for Liberty and Democracy*, a think-tank co-founded by Austrian economist and philosopher of classical liberalism Friedrich von Hayek and Peruvian economist Hernando de Soto; Facebook's initial investor Peter Thiel is both a member of the Libertarian Party and a staunch critic of welfare beneficiaries.

What is the place of the individual in this brave new world? Turner provides the following definition of this so-called "New Economy":

> Individuals could now no longer count on the support of their employers; they would instead have to become entrepreneurs, moving flexibly from place to place, sliding in and out of collaborative teams, building their knowledge bases and skill sets in a process of constant self-education.
>
> The proper role of government in this new environment, many argued, was to pull back, to deregulate the technology industries that were ostensibly leading the transformation, and, while they were at it, business in general. (2006, p.7)

Here we see individual freedom (and the personal responsibility that entails) contrasted with a situation in which government imposes order on industry. By removing the perceived tyranny of government regulation, it is argued, we gain greater freedom and flexibility in our own activity. The extent to which Turner buys into this argument (or how employees feel about their liberation) remains ambiguous (though Turner does contend [2006, p.3] that "there is nothing about a computer or a computer network that necessarily requires that it level organizational structures").

Kevin Kelly (1997, p.160), a former editor of *Wired* magazine and significant voice within Silicon Valley, argues "those who obey the logic of the net, and who understand that we are entering into a realm with new rules will have a keen advantage in the new economy". Far from the rallying cry to liberation this appears to be, it is a call to conformity, albeit conformity to a new paradigm. As Turner puts it:

> For the marchers of the Free Speech Movement, as for many other Americans throughout the 1960s, computers loomed as technologies of dehumanization, of centralized bureaucracy and the rationalization of social life, and, ultimately, of the Vietnam War. Yet, in the 1990s, the same machines that had served as the defining devices of cold war technocracy emerged as the symbols of its transformation. (2006, p.2)

Social attitudes may have changed, but I would argue that the computer as bureaucratic and rationalizing (itself a synonym for standardising) is still a potent concern. Once again, we encounter a disconnect between the freedom promised by an unregulated system, and the pragmatic imposition of rules and regulatory standards that maintain them. Many contemporary web services offer an application program interface (API), computational building blocks that programmers can use to interact with the services of Facebook, Google etc. This standardisation makes it relatively trivial to add a Google Map to a website, or Facebook buttons to an article. These parcels of proprietary code, however, impose the standards of the programming organisation precisely through their simplicity. A 2014 decision by Facebook to suspend access to Facebook friend lists via the API, for example, resulted in numerous applications ceasing to function. Prior to the introduction of additional emoji options, a Facebook user might have found themselves using the *Like* button on a post detailing the death of a relative. Originally organised chronologically, Facebook, Twitter and Instagram have all now introduced algorithmic sorting to posts on their platform. Users roundly criticised this decision, claiming that it gave undue power to promote or demote content, a concern that echoes the

distinction between objective dictionary sorting and the subjective encyclopaedia explored earlier. The anti-regulatory, freewheeling spirit of Silicon Valley is contradicted by its anti-diversity, standards-focussed secrecy surrounding the code it creates, and the blanket rules used to administer these communities.

Like the critics of Barbrook and Cameron, it is possible to criticise all this as Leftist paranoia, suggesting that the commercial mind-set of Silicon Valley is not represented in the purer visions of Berners-Lee and Nelson. Certainly HTML and its progenitors arose from CERN and the physical science ideals of collaborative research, but much of the contemporary work on HTML is being done in conjunction with the computing industry. The Web Hypertext Application Technology Working Group (WHATWG) is an invitation-only members committee, though contributors are invited to participate, which pushes for fasted adoption of XML into browsers. As a result of this and other pressures, the W3C has an increasingly strong commercial focus (witness its 2016 effort to incorporate digital rights management into the HTML standard.)

This division between the intellectual and the commercial is not of fundamental importance to the current argument; it is the potential of standardisation (and its associated collapsing of diversity) to act on behalf of its designer's interests or prejudice I am focussed on. One of the spurs to authoring his famous essay was Isaiah Berlin's reading of 19th century British prison reformer and philosopher John Stuart Mill. In many respects, Mill and Berlin are similar – both held the freedom of the individual to be the only true freedom; both considered the pursuit of self-improvement to be the goal of true freedom. The particular passage Berlin rejects is one in which Mill suggests despotism is "a legitimate mode of government in dealing with barbarians - providing the end be their improvement" (Mill, 1985, p.69). There are circumstances, Mill argued, in which liberty must give way to pragmatism. Berlin appears to believe that in this case, Mill lacks the courage of his convictions. Even in the face of barbarism, it would be wrong to impose a system so paternalistic as despotism; in this respect, if not others, he displays absolutism more familiar from, say, Kant. The defining characteristic of the Californian Ideology is precisely this distinction, the belief that "national governments are incapable of controlling the global system of computer-mediated communications" (Barbrook, 2002). This responsibility should, Silicon Valley suggests, fall to businesses, which Barbrook and Cameron feel benefit from public infrastructure in a manner which individual citizens cannot. Founder of Netscape and so-called voice of Silicon Valley Marc Andreessen donated

$100,000 to Republican candidate Mitt Romney citing his understanding that regulation “gets in the way of business” (Friend, 2015). Facebook founder Mark Zuckerberg spoke of “people and companies … work[ing] together to create [a] shared environment and make our shared space even better for the world” (2014), and called on the US government to be a “champion of the internet, not a threat.” Having offered Indian citizens free access to a selective internet service, he was reportedly furious that his offer had been rejected, unable to understand why they would not be keen. In the ruling that banned Facebook’s service, the Telecom Regulatory Authority of India had expressed concern about allowing providers to define the user’s experience, arguing “the knowledge and outlook of those users would be shaped only by the information made available through those select offerings” (2016). In India, at least, regulators seem to be working in favour of their citizens, fearing the potential selectiveness that even ostensibly neutral networks can afford.

4.5 Conclusion

This chapter sought to foreground the historic correspondence between the development of networked computer systems and the rejection of authority within tech communities, explicitly through the development of hypertext. Systems designed to liberate knowledge from traditional hierarchical structures by definition sought to regulate discourse, seeking to alter existing behaviour to suit their new technology.

Privileged connections between knowledge, authored by the users and reinforced by explanatory lists and clarifications were fundamental to this notion of freedom from hierarchy. The designers of computer software are often anonymous, Manovich told us, but they are certainly not absent; their approach to knowledge is felt in the way they fashion their universal building blocks before offering them to the user. Both Nelson and Engelbart prefer the idea of real-time collaboration between agents accessing information in the order that they desire, rather than the order dictated by some other authority that acts upon them. In his ACM hypertext conference paper, Nelson described hypertext systems as user-oriented and general purpose. In practice, however, designers define the workings of a virtual space, an action more reminiscent of positive than negative liberty, in contrast to the philosophy of negative liberty that predominated at the time.

In the same interview in which Thomas Knoll compared using Photoshop to “starting all over again” with your first digital camera, he added: “I suppose that’s the nature of writing a

versatile tool with some low-level features that you can combine with anything and everything else." This notion of devising a tool whose many low-level functions combine to have universal utility will be familiar from the various flavours of low-level machines adaptable to any work previously identified by pioneers in computer science (Bush, 1945; Engelbart, 1962; Nelson, 2003, p. 304). The transitional, historical, and culturally dictated features of hypertext systems become formal qualities of the medium, in turn allowing these qualities to define its intellectual horizons.

In their ground-breaking history of reading in the west, Professors Guglielmo Cavallo and Roger Chartier (1997, p.35) argue that form "transmits how the person who created that text […] perceived the reader's abilities", an argument I see as echoing Ensmenger's notion that an innovator also invents the people they expect to use their inventions (2010, p.15). The creators of hypertext favoured collaboration, real time co-authoring, and hyperlinks whose referent was always clear. In factual hypertext, writes Astrid Ensslin (2007, p.127), hyperlinks are at their most "transparent and intersubjectively predictable", most explicitly illustrative of "connections between ideas". Hyperlinks should be directive of attention, guiding the reader towards an intended meaning – this is the function of informational hypertext. All these features work together to make the author's intended meaning clear, and to underscore the virtual presence of the author within the hypertext web. "Because the essential connectivity of hypermedia removes the physical isolation of individual texts characteristic of print technology", Landow (2006, p.135) argues, "the presence of individual authors becomes both more available and more important." Of all the hypertext systems this authorial presence is most pronounced in what was earlier called *stand-alone, read-only* hypertext, in which the only virtual presence is that of the author, wearing the various masks of their selected sources. If form "dictates a way of reading the text and of creating comprehension and controlling interpretation" (Cavalo & Chartier, p.28), hypertext represents a medium that valorises the author.

So now we have seen how both hypertext and literary theory sees the praxis of liberty and authority within their particular fields. The following chapter will consider how effectively stand-alone, read-only hypertext fiction synthesise these often-competing intellectual genealogies.

Chapter 5 Hypertext Fiction, Authority, Freedom

The preceding chapters explored the principles of authority and liberty, as described by influential hypertext and literary theorists. The goal was to demonstrate that while both hypertext and poststructuralist literary theory seem to share broadly compatible philosophical goals, in practice they approach authority in different and significant ways. Poststructuralist literary theory privileges the network metaphor and the elision of textual boundaries, placing particular emphasis on ambiguities not resolvable within the text. Hypertext, by contrast, seeks to *resolve* ambiguity through the work itself, via interconnectivity, the establishing of coherence through hyperlinks, and an amalgamation of the author/reader role, albeit only in specific contexts.

This chapter seeks to highlight these incompatibilities through the praxis of stand-alone, read-only hypertext fiction, identifying ways in which hypertext as a form integrates problematically with literary fiction as a writing mode. If hypertext fiction was indeed the test to which poststructuralist literary theory should be put, then the results are at best ambiguous; at worst it actively works against the reader, despite the opposing claims made by major first wave theorists (see Chapter 2).

The first section will look at the notion of information asymmetry, the imbalance of knowledge between author and reader. It summarises the principle argument made for stand-alone, read-only hypertext: that by substituting a branching network for the continuity found in the linear narrative work, the reader is able to evade some aspects of authorial control, at the price of a more confusing narrative structure. This is an argument found even in the work of critics who do not accept the antiauthorist argument. Three interrelated counterarguments are offered: firstly, that the presence of unread lexia permits the author to intrude into the interpretative space of the reader, by denying that the work is finite; secondly, that the opaque hyperlinks favoured by theorists encourage this intrusive strategy; finally, that these two mechanisms encourage the reader to see reading as a quest for meaning, a framing at odds with the work of Foucault and Barthes, not to mention other key literary theorists from the preceding chapter.

The second section explores this question in a different way, focussing on the manner in which hypertext fiction's approach to indeterminacy encourages the reader to return to the work (and by extension the author) for validation of their interpretation. The third section looks at the kind of choices offered by hypertext fiction. It establishes the failure of modernist hyperlinks

to offer meaningful choices, concluding that stand-alone, read-only hypertext fiction offers a form of choice we might call *theological* (see Section 1.3.3). The morality of this choice framework is then discussed in the chapter's closing paragraphs.

An emblematic statement of conventional hypertext fiction's anti-authorism helps to frame these arguments, for which I turn to a characteristic paragraph from Gunnar Liestøl:

> In reading hypertext fiction the reader not only recreates narratives but creates and invents new ones not even conceived of by the primary author. In hypertext fiction the key principles of narrative structuring, and thus the basic operations of authorship, are transferred from author to reader, from primary to secondary author" (Liestøl ,1994, p.98)

It is against this statement – and the many like it - that the following chapter defines itself.

5.1 The Consequences of Information Asymmetry

Literature is predicated on the principle of information asymmetry: the author knows the full structure and content of the work, while the reader does not. Reading a work requires an act of engagement, generating an interpretation as it unfolds. What the reader cannot do, however, is test this interpretation directly against the author's intended meaning, since the author is unavailable to them. As Jane Yellowlees-Douglas argues, this asymmetry "depriv[es] readers of the feedback loop by which they might test their understandings of the words they read or of the author's intention" (1991). Unlike a conversation, in which participants may seek clarification, no specific interpretation can be verified from within the work itself, if the material required for this validation is not provided. We may turn to extra-textual critical writings or the author's biography for further corroboration, but this process of verification requires a submission to the authority of either critic or writer respectively.

Ambiguity, and therefore room for interpretation, relies upon what the author does *not* include (see Chapter 3). Jane Austen may indeed be ironically chronicling the life of unwed women in *Pride and Prejudice,* but the existence of alternative interpretations relies upon this irony never being overtly expressed through paratextual authorial justification or subsequent textual confirmation. Literary theorist Mikhail Bakhtin (1984) compares the novel to *polyphony*, the author's voice being fragmented into multiple and potentially contradictory character voices. Contradictory perspectives offered by fictional characters can frustrate efforts to find authorial meaning solely within the work. While Bakhtin cites the various views and perspectives found in Dostoyevsky's prose, we might also recall Lucifer in Milton's *Paradise Lost,* whose charm and justifiable indignation at his lot makes Milton's intentions ambiguous. Reading a novel causes

the “body that writes” to disappear (Barthes, 1993, p.142), as the complex world of characters replaces the author’s singular voice.

The preceding paragraph outlined one of the mechanisms by which the author may become abstracted in the linear form of the novel, permitting the reader space to interpret as they choose. What are the consequences of introducing hypertext to literature’s asymmetrical power relationship? For Yellowlees Douglas (1991) the answer is plain. While individual scenes within a linear print narrative may be discrete, they still exhibit a “rough continuity” that suggests one event leads to another. Like visitors to the period rooms of London’s Geffrye museum, the reader is led from vignette to vignette, without the opportunity to explore or interact. Literature (and most other forms of linear media) presents a work that is by definition structured; the order of scenes and narrative focus are the domain of the author, whatever subsequent questions the narrative may raise. In hypertext fiction, however, there is “no hierarchy of yields, no grammar of paths” (*ibid*) that can impose meaning upon the reader. We are said to explore hypertext’s networks with no certainties, unexpectedly leaping in time and space, or finding ourselves unexpectedly returned to familiar locations. A reader of *afternoon* may begin with this passage:

> I try to recall winter. <As if it were yesterday?> she says, but I do not signify one way or another.
>
> By five the sun sets and the afternoon melt freezes again across the blacktop into crystal octopi and palms of ice – rivers and continents beset by fear, and we walk out to the car, the snow moaning beneath our boots and the oaks exploding in series across the fenceline on the horizon, the shrapnel setting like relics, the echoing thundering off far ice. This was the essence of wood, these fragments say. And this darkness is air.
>
> <Poetry.> She says, without emotion, one way or another.
>
> Do you want to hear about it? (Joyce, 1987)

This screen offers nineteen different links, ranging from *blacktop* to *poetry*, each of which leads the reader to another location in the narrative. These hyperlinks are not numbered or prioritised, therefore offering (for Yellowlees Douglas at least) a withdrawal of the authorial presence. By allowing the narrative to progress not under the jurisdiction of the author but by the selection of links, the reader is said to be engaged in an act of vicarious quasi-authorship that encourages them to pursue their “own” path through the story. As scholar Mark Rosenburg (1994, p.273) puts it, empowerment in conventional hypertext comes via the “contingencies of choice” made possible by nonlinear connections between lexia. You choose *blacktop*, I choose *poetry*, and our respective paths through the story diverge. Unlike linear print literature, which handholds us through the narrative, we are required to “traverse” the story, to borrow a term from Aarseth (2006, p.125). This replaces the linear work’s rough continuity with “a nonlinear constellation of

text chunks" from which the reader can choose individual (customised) routes (Liestøl, 1994, p.104).

This section recalls two concerns from previous chapters. Firstly, that first-wave critics of literary hypertext fiction misrepresented Barthes' *Death of the Author* as the blueprint for a new medium, rather than a critical approach to literature requiring no material validation (see Section 3.1). Secondly, that linear print fiction and hypertext fiction should not be compared (see Section 2.2) since they offer radically different affordances that are incommensurate. As argued in these two sections, critics of literary hypertext fiction have tacitly or implicitly drawn comparisons between these different forms, discussing them in formalist terms as tools for the perpetuation of anti-authorism. To illustrate this principle, reconsider Bakhtin's polyvocality from page 154. Bakhtin established that polyvocality was a literary technique, an approach found in the work of totemic authors like Dostoevsky. Some significant critics (Bolter, 2001, p.7; Gaggi, 1997, p.111) have chosen to frame all linear print fiction as the servant of a single authorial voice: a "univocal" medium (Delany & Landow, 1994, p.112), inextricably bound up with its origins in the spoken word. Conventional hypertext, by virtue of branches that the author cannot control, is described as offering a genuine multivocality that the univocal literary print form cannot afford. This falls foul both of comparison between two incommensurate media, and perceiving a critical approach as a structural framework. Hypertext's position as going beyond text can also be invoked to both absorb and supercede the capacity of linear print. Shelley Jackson's *Patchwork Girl,* Landow argues, "endows each tale, each life… with a distinctive voice··· while simultaneously presenting a composite image of women's lives at the turn of the nineteenth century" (2009, p.121). This absorption of a prior medium into another, described by Bolter & Grusin as *refashioning* in their book *Remediation* (2000, p.47) makes hyperlinks a vehicle for both polyvocality and its opposite.

What is the consequence of permitting readers to choose their own path? Confusion. This at least is the general consensus among key theorists of literary hypertext fiction's first wave (Bolter, 2001, p.137; Gee, 2001, p.14; Harpold, 1994, p.193; Landow, 2006, p.145; Murray, 1997,p.133; Pajares Tosca, 1999, p.217; Yellowlees Douglas, 1991). This is borne out by later studies of the phenomenology of reading stand-alone, read-only hypertext fiction (Gardner, 2003; Mangen, 2008; Miall & Dobson, 2001). "The kind of textuality created by linking encourages certain forms of metaphor and analogy," says George Landow (2006, p.198), citing

the stitched-together nature of Shelley Jackson's *Patchwork Girl* or, similarly, David Yun's use of a metro map to contrast the chaotic internal links of his *Subway Story*. Disorientation is taken as a given, but it is a disorientation that supposedly comes from the removal of authority.

To summarise this argument: conventional hypertext breaks a narrative into lexia, interconnecting them in a manner that undermines the authority of the author. Disorientation is described by some critics as a necessary consequence of this process, since the author no longer guides the reader's movements through the work. The "rough continuity" offered by linear print fiction – seen as a legacy of authorial control – is removed, permitting the syntagmatic relationship between story elements to be disrupted. In exchange for a vicarious sense of authorship, the reader accepts a measure of bewilderment.

The remainder of this section will focus on my objections to this argument: firstly, that in stand-alone, read-only hypertext fiction the author loses none of their control over the narrative; secondly, that this disorientation results in a quest for meaning that is entirely at odds with the objectives of anti-authorism. The primary branch of literary hypertext fiction scholarship (Bernstein, 2009, p.4; Bolter, 2001; Grusin, 1994, p.472; Landow, 1994; Lanham, 1993; Morgan 2002, p.220) see stand-alone, read-only hypertext fiction as reconfiguring the authorial self, but they understand this reconfiguration in the wrong way. The author is not dead; rather they have been allowed to haunt the virtual space of interpretation.

5.1.1 The Hyperlink as Intrusive Tool

What was it that separated linear print fiction from hypertext fiction? For the majority of critics mentioned here, it was the hyperlink. "Linking is the most important fact about hypertext" writes Landow (2006, p.20), while Aarseth (1994, p.1) concludes that hypertext, for all the theory and analysis, is "merely a direct connection from one position in a text to another". Histories of hypertext tend to follow Kahn's formulation (1995, p.222): "The basis of hypertext is the ability to create and follow persistent links between any two items, a concept traceable to the design of the memex described by Vannevar Bush". As Chapter 4 argued, however, the ambitions of hypertext's pioneers extended beyond this rather narrow definition, encompassing collaboration, open networks, and structural clarity as key components in a properly functioning hypertext system.

Nonetheless, the hyperlink became the locus of investigation into authorial negation found in the work of first-wave critics of hypertext fiction, and for this reason the following section will

outline the manner in which the hyperlink paradoxically re-embodies the author. Linear print fiction has numerous methods for encouraging ambiguity – intentionally contradictory characters, unreliable narration etc. – and this section will argue that the hyperlink only undermines such tools for distancing the reader from the author.

Firstly, we should dispense with the idea that the hyperlink as deployed in stand-alone, read-only hypertext fiction permits the reader to intrude into the creative space of the author. Describing the linear printed work as a road through an obscured wilderness, Mireille Rosello (1994, p.134-5) envisions hypertext as a means of taking exciting off-road excursions the author did not intend. In this argument, the reader diverges from the concrete motorway of linear narrative, to cut their own path through the work.

This vision of liberation is contingent, as argued in Chapter 2's discussion of networked, user-editable hypertext systems, on two features: a living and expanding network, and the capacity to author links. Without these, other paths through the work merely become parallel carriageways, no less under the jurisdiction of the author than in a conventional linear narrative. Wilderness remains wilderness, since the network expands only under the direct control of the author, and then only into territory over which they already exert control. Contrast this with the linear print work, in which the reader clearly understands what is wilderness (virtual space) and what is narrative (authorial space). They are free to speculate on what exists outside the bounds of the work, since those bounds are understood. The conventional hypertext work implies its continual presence in the interpretative wilderness, by showing the off-ramp less travelled. Take the phrase "I went with Joe and Dave" - context suggests an association that can only be contextualised by additional material or future reading. If both are hyperlinked, the reader must assume the author knows more than they do about these characters. Failing to return to this lexia means the reader misses a chance to find out more about these characters, but know these characters have more to yield. Susana Pajares Tosca notes there are:

> situations when we are interested in exploring a wide range of implicatures, even if they are weak (for example, literature), and others in which we are not and simply want to disambiguate a sentence (for example, a letter from the bank) (2009, p.109).

Hypertext is not well suited to the subtle, often contradictory correspondence between ideas (see Section 4.3) and is better suited to a direct connection of knowledge areas.

Does some distant, unexplored path disprove a reader's interpretation? The reader cannot know, unless they pursue all these unexplored paths exhaustively. Kolb (1994, p.335) defines hypertext as "a system of linked presences" rather than a "play of presence and absence",

which neatly articulates my concerns. The material is known to exist, since that is the function of the hyperlink; only those words that are not hyperlinked refuse further exploration, and therefore shift to the control of the reader. Ironically it is only these words of secondary importance the reader can guarantee as truly "theirs". Readers of linear print fiction can at least rely upon a fixed set of symbols, something Wolfgang Iser saw as fundamental to the reading act (see Chapter 4) since it was the basis for understanding the boundaries of the work. The hypertext author is eternally threatening that perhaps the next lexia, or some overlooked hyperlink, will provide key information the reader might use to reinforce or undermine their emerging interpretation. George Landow recognises the observation, if not the criticism, when arguing "hypertext presupposes an experiential world in which the goal is always potentially but one jump or link away" (2006, p.153) but sees this as somehow empowering for the reader, a certainty I do not share.

Conventional hypertext fiction creates a work without boundaries, but only because the virtual world beyond the narrative which was previously the domain of the reader's imagination becomes contested. Describing the process of reading Michael Joyce's *afternoon,* Yellowlees Douglas (1994, p.166) suggests that instead of "narrowing the margins" as she reads, *afternoon* continuously broadens them; it is the reader's interpretative territory, however, that is being encroached upon by these broadening margins. Iser argues that differing interpretations are always "within the limits imposed by the written as opposed to the unwritten text" (1974, p.282), since what is unwritten cannot exert influence on the reader. In hypertext, however, so much is "unwritten" (in the sense that readers cannot know what boundaries exist within the work) that interpretation becomes legislated entirely by the work itself. We may also recall Galloway's description of protocol as a road network (see Section 4.2.2), wherein participants travel freely, but only within boundaries the system provides and related notions of positive liberty. Silvio Gaggi (1997, p.102-122) argues that the reader defines the "textual boundaries" of the hypertext reading experience, an argument that relies both on the impossibility of navigating every part of a hypertext web, and the potential for infinite connections within it.

5.1.1.1 Boundaries

This question of boundaries and limitations recalls a quote from author, theologian, and critic G. K. Chesterton (1908, p.25): "Anarchism adjures us to be bold creative artists, and care for no laws or limits. But it is impossible to be an artist and not care for laws and limits. Art is limitation; the essence of every picture is the frame". Chesterton is not describing boundaries as a tool for

greater creative expression, though there is evidence for this effect (Haught-Tromp, 2016). Instead it is an acknowledgement that artists and audiences anticipate a boundary around the work, which designates the interpretative space that belongs to the reader; in this it echoes Huxley's discussion of the essay as by definition and function limited in scope (see Section 4.3.1).

Selectiveness is an egalitarian tool; it is the author's acknowledgement to the reader that their work cannot be exhaustive. The essence of the picture is the frame, but hypertext fiction resists and rejects this frame in theory and practice, refusing to acknowledge a limit to its materiality and scope. "Instead of facing a stable object – the book – enclosing an entire text and held between two hands," argue Paul Delany & George Landow (1995, p.3) "the hypertext reader sees only the image of a single block of text on the computer screen." Delany & Landow's example, it should be noted, also describes the eBook, though its linear presentation and reproduction of footnote logic in the presentation of hyperlinks is at a step removed from the hypertext that is their focus. In his essay *The Archaeology of the Computer Screen,* Lev Manovich (1995) suggests that the frame found in cinema is "aggressive", since "it functions to filter, to screen out, to take over, rendering non-existent whatever is outside its frame". Manovich contrasts this stability with the liberty of the computer's flexible, real-time display. This flexibility may be advantageous for the author, but the reader finds themselves robbed of the certainty offered by clear material boundaries.

This is not to say that the conventional hypertext work is without boundaries entirely, despite the loose use of "infinite" to describe the boundaries of hypertext (see Section 2.3). *afternoon,* for example, contains around 500 lexia in total. *afternoon* and works like it offer instead a *sufficient* infinity; sufficient, that is, to bewilder and disorientate the reader. Berlin's two concepts of liberty are defined either by a bounded space in which no rules apply (*negative liberty*) or an infinite space governed by rules that govern our freedom (*positive liberty*). Literary theories around authorship (see Section 3.1) approached the freedom of the reader from a negative perspective, suggesting that the reader requires interpretative spaces (gaps) into which the author cannot intrude. In order to do so, it seems self-evident that the reader must know the limits of the work. "In the coding of a story into a narrative text," argues classicist Nick Lowe, "the universe of the story is necessarily presented as a closed system" (2009, p.45). Closed perhaps, but not isolated. Barthes' description of the work as a tissue of citations is not calling for its parameters to be infinitely extended. This metaphor (and metaphor it should

remain, despite efforts to align Barthes' ideal text with hypertext) describes a temporary organisation of ideas, held together weakly. The book does not need to connect parasitically to another work for us to understand that these works are connected; the photograph may contain people and places that connect outside the image, but nothing of the work exists outside the frame. To allow the work to make connections explicit, hardening tissue to bone, is to permit a claim to importance that is not due.

Hypertext, by contrast, emphasises positive liberty, the argument that a shared set of limiting rules creates a space in which we can all experience a kind of bounded freedom, whose rules may be extended and expanded indefinitely. It is the awkward synthesis of these two ideas – the paradoxical pursuit of negative liberty through the apparatus of the positive - that is generative of such bewilderment in the reader.

If conventional hypertext fiction is not infinite, then what is the source of its supposedly infinite diversity? Acknowledging that read-only hypertext means the reader must "always behave within and be conditioned by the constraints of that arrangement", Gunnar Liestøl (1994, p.103) argues that they are at least still free to interpret the text's "signifieds" in a variety of combinations. Static as the lexia may be, at least they can be encountered in unexpected orders. Stand-alone, read-only hypertext cannot embody Barthes' antiauthorism, since its pre-linked lexia become a galaxy of signifieds rather than one of signifiers; a view Liestøl appears to corroborate. Sifting through signifieds, however, is to search through the author's answers looking for the solution to your question, and it is still a coercive intrusion into the reader's space. Professor David Miall (1999) rightly notes "what the author finds significant, the reader may not". Any author can prod the reader towards a particular idea or principle, but only hypertext can literally steer readers to the same idea over and over again, while maintaining the illusion of choice. Those seeking information, argues George Landow, find it as much by "what they know about that information as by system features alone" (2009, p.95). What they know about that information, however, can also be derived *from* the system features, in the form of emphasized hyperlinks or privileged nodes. Drawing on the example of cinema, Aarseth (1994, p.57) concludes that showing a film in a different reel order is not a new film (though it is a new experience). Each successive reading is composed of the same components, components whose relationship remains either static or at the mercy of the author.

In what some consider a post-mortem on hypertext fiction's first-wave, literary critic Marie-Laure Ryan (2006, p.109) argued that hypertext networks are "too densely connected" for

the author to control the reader's progression. This is an distorted version of hypertext, however, a formalist statement not supported by studies of hypertext reading strategy (Gardner, 2003; Gee, 2001; Livingstone, 2004; Mangen, 2008; Miall & Dobson, 2001; Miall, 2004). The author maintains significant control over the conventional hypertext fiction work. An author might, for example, choose to rigidly structure a work (Hales, 2007; Kolb, 1994, p.339; Mazzali-Lurati, 2007, p.147; Rosello, 1994, p.139) to ensure that key ideas are connected in a preferential way. This ensures that readers continue to encounter some ideas more frequently than others. Delaney & Landow (1995, p.11) argue that hypertext linking situates 'on-screen' lexia as fleeting centres of a textual universe, with no lexia able to "tyrannize other aspects of the network" like recurrent arguments in a linear printed work can. This is to ignore the structural coercion that a hypertext work can permit, guiding readers to a point of view.

Yellowlees Douglas' counterargument that knowledge of a particular lexia's placement "at the hub of the narrative structure" does little to "relieve the ambiguities of the text" (1994, p.176) seems disingenuous, another layer of uncertainty encouraging readers to see repeated lexia as happenstance, not manipulation. Liestøl uses the metaphor of a photo album to describe conventional hypertext fiction's informal assemblage of messages without explicit connections (1994, p.92). An album is curated, however, and just as a family album may be organised to invisibly excise a disgraced relative, so a hypertext fiction work may invisibly omit or favour a particular viewpoint. Reading a polemical work may lead the reader to question the absence of a particular perspective, but stand-alone, read-only hypertext fiction evades this precisely by its proliferation and density of links, since any one of them might offer a rebuttal to the reader's concerns.

Seeing hyperlinks as an intrusion into the reader's interpretative space means they become overdetermined, taking on a greater significance than their surrounding material. Hyperlinks function as an extension of typographical emphasis - more so, since the hyperlink simultaneously embodies the qualities of the footnote and the underscore. This is not an issue where the aim is to steer readers through a complex web of ideas, as envisioned by informational hypertext theorists in Section 4.2, or in the collaborative spaces of a fully user-editable hypertext system. When we are supposedly developing a framework for resisting the authorial presence, however, placing such weight on specific terms becomes more problematic. This approach encourages us to empathise more – not less – with the author's intended

meaning, since there exists two narrative worlds: one with which we can interact, and one which we cannot. Consider this passage from Shelley Jackson's *The Body*:

> There's a snapshot of me doing it. I was prepared to practice until I mastered it. But was this really what dancers did? I could scarcely imagine spinning or leaping on my turned-over toes. How was it possible? If other bodies could do things, magical things, that I couldn't even approximate, then a body was like a cabinet of wonders inherited from a great-aunt: you didn't know what was in it, but one day you opened a drawer and pulled out something wonderful. I might be able to do things nobody else had even imagined. All I had to do was try everything. Sooner or later I would find out what my own big trick might be. (Jackson 1997)

By emphasizing only specific words and phrases within the passage, I know Jackson considers them to be significant. Why? Either I "know" (in which case I have already engaged with the author's intention) or I do not. What does it mean if I don't know? In discussing the hyperlink, David Miall argues that "what the author sees as a significant connection, a reader may not" (1999) while dissenting theorists (Kendall, 1999; Miall, 2004) and even some supporters (Yellowlees-Douglas & Hargadon, 2001) infer that the hyperlink carries too much power; that the reader, seeing a linked word, will perceive it as possessing special importance. It seems sensible to conclude that the truth lies in an uncomfortable hybrid of both: obviously it is important, since the link is highlighted, but the reader has no idea why. Describing his experience of *afternoon,* Aarseth comments that he felt "constantly sidetracked, turning and turning in the dilating text, dead sure that important things are being whispered just beyond my hearing" (1994, p.70), a far cry from Landow's confident promise of a new 'reader-author' (1991, p.117).

This is not a question of formatting or visual display: *afternoon* does not identify hyperlinks with signs or symbols, resulting in the reader being required to go "hunting for [them]" (Harpold, 1994, p.191). In whatever form they take, hyperlinks invest words with a significance which extends beyond mere meaning. Hyperlinks in fact represent a way of "controlling" the reader that extends beyond authorial intention entirely, into a structural and experiential sphere not found in linear media.

5.1.1.2 Genre of Hyperlinks

How do the strategies for using hyperlinks in modernist literary fiction diverge from the approach found in knowledge management? One particular difference is in the descriptive nature of hyperlinks. Chapter 4 established that for knowledge management purposes, hyperlinks generally function as a means to explicitly connect related information. Like other information management systems, hypertext was designed as a way to make knowledge more accessible,

whether through the exhaustive tags of Trigg and Weiser's TEXTNET, or Nelson's vision of a "new libertarian literature" in which "anyone can choose the pathway or approach that best suits him or her" (1987, p.14). It is for this reason that hyperlinks have descriptive link text, since it makes their destination easier to predict, and why so many significant figures sought to standardise the meaning of link structures (see Section 4.3.1).

First wave scholars of hypertext fiction (Harpold, 1994, p.191; Bernstein, 2000) generally resisted the descriptive approach, however, calling instead for an opaque linking strategy that leaves destination lexia a mystery to the reader. It is easy to understand why: if hyperlinks with descriptive text lead the reader by the nose, then logic would suggest that inscrutable hyperlinks would give the reader space to interpret. Mark Bernstein, who is particularly dismissive of descriptive links, suggests that "if links lie no one will trust them, if links are candid no one will follow them" (2000), since their outcome is inevitable. Where the default strategy didn't work, literary fiction writers assumed that an inverse strategy would have the inverse effect.

Are descriptive links really so poorly equipped for literary purposes, however? Drawing on research from numerous theorists of literary hypertext fiction, Marie-Laure Ryan (2006, p.110) identifies six distinct genre of hyperlink: *spatial, temporal, simultaneity, digressive, perspective* and *blatant*. Only the last of these offers a narrative affordance unique to hypertext. Taking each in turn: *Spatial links* invite users to connect two ideas or objects. This is the form most familiar from hypertext in general, but can be achieved outside hypertext: an image with a caption, for example, or the use of footnotes. *Temporal links* move the user forward in narrative time, progressing events towards a conclusion. While mechanically different, this is the same elliptical function as reading from a paragraph set in one time period to one set at a later date. *Simultaneity links* move the reader between different storylines. This is of course a common literary technique, where multiple different storylines evolve simultaneously or in parallel. *Digressive links* voice an aside for the reader, the equivalent to footnotes. *Perspective switching* offers a view of the interior worlds of two different characters, which has innumerate literary precedents.

Each of these hyperlink genres has a direct counterpart in linear print fiction; they may not be entirely comparable, but share a similar purpose. Her final category, *blatant links*, constitute the only genre that doesn't have an obvious parallel in linear print, and are therefore the only ones unique to hypertext. Blatant links tell the reader what to expect at the other end of the link, an action that can have no literary precedent, since the material content of the link lies

outside the flow of the written passage. In any other genre of hyperlink, the destination content remains opaque; it is only the blatant link that explains itself before selection.

Five of the six link types offer the reader no clear opportunity to predict what they are linking to, reducing any sense of meaningful agency. It is ironic, then, that only the underrepresented blatant link, with its explicit identification of destination, arguably offers both a solution to the confusion of conventional hypertext, and something unique to digital textuality. Bernstein believed that links that are too candid will not be followed, which is not reflected in the reading strategies identified in various studies of hypertext (Gardner, 2003; Gee, 2001; Livingstone, 2004; Mangen, 2008; Miall & Dobson, 2001; Miall, 2004) or the framing of hypertext found in early hypertext theory (Engelbart, 1962; Nelson, 1987, p.14). Instead, readers pursue links that interest them. What can possibly motivate this interest, save an expectation of where that hyperlink might lead? Despite this, as Ensslin (2007, p.127) notes, authors of literary hypertext tended to "subvert the transparency of interconnectedness" for their own ends.

Efforts to assign typologies or genre to hyperlink have been historically resisted. Wendy Morgan calls such work a "perverse structuralist attempt to tidy into boxes what of its nature resists such tabulation" (2002, p.228), while Bernstein bemoans those scholars seeking to impose "overt functions" on hypertext nodes (2009, p.10). Equating hypertext with "the kind of pleasurable disorientation that one finds in Dante's *Divine Comedy,* Browning's *Ring and the Book,* and Eliot's *The Waste Land*", Landow suggests that both represents a "source of pleasure" to the expert, and "unpleasant confusion" to the neophyte (2009, p.91). This neophyte and their equivalent expert user is borrowed from Landow's earlier work (see p.131) and carries the same disdain for human capabilities found in some branches of cybernetics (see Section 4.2.4). Failings of hypertext are framed as an inability on the reader's part to grasp its complexities.

This obsession with bewilderment perpetuates the paradox of this peculiar historical manifestation of the hypertext paradigm: that efforts to make it more approachable are resisted almost as much as efforts to label it as resistant to readers. Bernstein pits disorientation against diversity, suggesting that in reducing the former we reduce the latter. What is privileged in such hypertext works is, as ever, its capacity to bewilder. Blatant hyperlinks at least permit readers to make meaningful decisions, motivated by clear knowledge of both context and outcome; this is

the selfsame category of hyperlink least likely to find its way into the works of those seeking to empower readers.

Hypertext formalism as implemented in *afternoon* and other, similar works privileges the author at the expense of the reader precisely through the vehicle of the opaque link, the exact opposite of its intended goal. Consequently the reader finds themselves in a virtual space whose boundaries and structure are unclear. This bewilderment (and its relationship to modernist and postmodernist literary modes) can be usefully explored by referencing Frederik Jameson's *hyperspace*.

Jameson uses the term *hyperspace* (1991) to describe the postmodern built environment, in which all sense of scale and proportion is gone. Columns rise up to support nothing; grand entranceways lead nowhere; gardens appear not on the ground floor, as one might expect, but on balconies and rooftops. Hyperspace in the built environment, Jameson argues (p.41), functions to isolate the subject from the "real world" outside: each entranceway is "downplayed to its bare minimum" since the function is to create "a total space, a complete world" which the visitor may explore without reference to the outside environment. While Jameson does not make this direct connection, I suggest that this description seems more reminiscent of the mall than the hotel: a space in which elevators only take the visitor deeper into the shopping structure, while out-of-the-way staircases lead to drab and concealed exits; a space in which the distinctive features of the surrounding architecture are echoed in storefront windows, where food courts seek to echo the wholesome familiarity of family restaurants. Compare this to the simple circuit of a farmer's market. The mall coerces through its apparent freedom to roam, but this freedom is an illusion designed to keep the visitor disoriented as long as possible. The farmer's market, however, offers only one gyratory path from entrance to exit, during which you are free to purchase or ignore what you pass. The apparent freedom of the former masks its more coercive structure.

Jameson parallels the "bewildering immersion" of the former structures with the suppression of depth in postmodern art (p.34), an argument that can be extended to conventional hypertext fiction. As the connection between reality and representation of reality dissolves, we are left with a "glossy sheen" which rejects any sense of authentic history to the space. Consider this passage from Porpentine Charity Heartscape's 2014 *With Those We Love Alive.*

> The palace courtyard.

A balcony looks upon the outside world. The throne room is closed for the Empress's inaugural blood bath.
Your chambers are on the second floor.
The garden sprawls over there. Your workshop is in a cabin down a shady path.
The city is through a vast archway hanging with vines.

There is no clear sense of place or time; no sense of scale or environment. We are directed but directionless; free in five ways only, and uncertain where these five ways will lead us. It is a structure designed for purposeful authorial complexity.

We can see this same favouring of disorientation in the relative absence from literary hypertext fiction of the multiwindow approach. Nelson's original definition of hypertext emphasises *dynamic display*, the presentation of both source and destination for a hyperlink in multiple windows (1965). This feature is also present in Apple Computing's *HyperCard* system, a Nelson-inspired 1985 software system which presented database information as a series of on-screen "cards" which could be sorted or filtered by the user. HyperCard also bears significant similarities to ENQUIRE, Tim Berners-Lee's predecessor to the web, in its presentation of data as siftable card stacks.

This multiwindow aspect of hypertext speaks to the intention of hypertext's designers to make knowledge easier to compare, rather than harder. From the perspective of the mid-1990s, Terence Harpold (1994, p.196) argued that most hypertext applications already allowed a user to "open multiple windows on different sections of a document, or on different documents" and this is certainly true today. Most works, however, chose to obliterate one lexia as the next loaded, much as clicking a link on a website today generally replaces one page with another. By contrast, multiple windows are not restricted to these two views (the origin page and destination page); instead it permits as many windows as the user requires for effective navigation. Many readers report supplementing literary hypertext systems by keeping a notebook to write down key elements as they browse, since they know these will be hard to locate in the future. The multi-window interface and collaborative workflow of hypertext (both features identified as essential in Nelson's ACM presentation) are poorly represented in hypertext fiction (Bell, 2010, p.2), while the hyperlink – which has a problematic relationship with anti-authorism– is considered its central feature.

The disadvantages of the single window interface are manifest. Consider the read-only version of *afternoon,* the one accessed by most major theorists (Aarseth, 1994; Harpold, 1994). This interface restricts the reading view to a single lexia in a fixed window, offering just three

forms of navigation: *hyperlinks*, accessed either within lexia or by typing terms into a text field; the *Return* key, which advances the narrative one step forward; or toolbar buttons, *Back/Browse/Yes/No*. *Back* returns the reader to the previous lexia; *Browse* lists all available hyperlinks in the current lexia; *Yes* and *No* are used to answer questions within the narrative; the *Return* key has the same function as the *Yes* button. Despite this apparent navigational complexity, it is the hyperlink which rules: the *Browse* function provides no additional context for destination lexia, while *Yes* and *Return* both provide the same function. Despite the array of interface options they are all functionally identical: offering ways in and out of the current window that displace the reader.

Stretchtext, an alternative form of hypertextuality proposed by Nelson and later implemented by a team at Southampton University (Hothi *et al.,* 2003, p.335), allows new words and phrases to "pop in", to borrowing Nelson's term (1974, p.315) when activated. Landow (2006, p.95) offers this approach as an alternative to traditional link-and-node hypertextuality, arguing that it withdraws some of the fragmentation inherent to standard hypertext works. This is true, and speaks to the wider need for multiwindow approaches. The practical consequence, however, is to once again introduce the idea of authorial "levels", the suggestion that there is an upper level argument which can be drilled into in the way the author desires. Systems wherein links in forthcoming lexia could also be previewed would help orientate the user within the system, as would a subcategory system for links.

In contrast with Yellowlees Douglas *et al,* this thesis would argue that conventional hypertext *is* defined by its grammar of paths – what else is a hyperlink, if not a recommended path through a fiction? Similarly, the suggestion that there exists no "hierarchy of yields" (in that each hyperlink within a particular reading unit is equally inviting to the reader) ignores a secondary tier of words that are not hyperlinked. Traversal in rock climbing describes the identification of a possible route based on fixed available points, and this is very much how conventional hypertext fiction should be seen. The links between lexia are the work of the author, and the reader must make their selection from these options. Unlike the rock climber, however, the reader is blindfolded, unable to see where these handholds will lead them and forced to make unnecessary retreats before trying another route. Linear print literature demonstrates that interpretative gaps are created by the absence of authorial presence, but every hyperlink creates a contested space within the work.

More importantly, this approach is to misinterpret the *language* of gaps for the *intention*. Iser discusses the gap in terms of spaces created for the reader to fill – a potential relationship here, a possible parallel there – which readers must infer for themselves. There can be no misinterpretation in this admittedly idealised scenario since no interpretation – even that of the author – is privileged. Deferential regard for the critic or authorial clarification is to abjure this privilege in favour of the certainties of authorial meaning, the precise target of Barthes and Foucault's earlier critique. Linear fiction might perhaps be seen as a sightseeing tour, taking in specific sites on a specific route. This is not to suggest that other sites of enquiry do not exist, but it is for the reader to visit them at their leisure and in their own manner. These sites are not part of the tour, the map is blank. Japanese artists use the term *Ma*, which may be translated as gap or space, to describe the practice of consciously leaving spaces in a work, spaces that the viewer may fill with their own interpretation. These are authored gaps, conscious areas as rich in potential meaning as the more visually busy ones. Our focus in the complex network connecting us to the work should be as much in the spaces as the written material.

The introduction of a hypertext network, however, problematizes this model. It introduces two related variables into the reading act: firstly, the reader cannot speculate about where these gaps may lie, thereby making all sites potentially part of the author's sphere; secondly, the expansive nature of the web means the reader cannot be certain that they will not at some future point encounter lexia which undermines their interpretation. This is also a feature of linear print fiction, of course, but then linear print fiction makes no claims to the contrary.

Terence Harpold (1995, p.173) recognises no distinction between readers and authors in hypertext of any form, since the hypertextual subject who navigates a hypertext web "inhabits its gaps" and therefore is not beholden to the linear flow of an argument. These gaps are, however, provisional, and contingent on the author having left them as such. This is not the *Ma* of Japanese art, since the gaps are not certain. As McGee & Mitchell (2012, p.110) note, a reader discovering a new node "will change their view of whether or not they are rereading", meaning their interpretation is less stable than in linear print. Bolter argues that in linear print "there is always a gulf between author and reader, a gap that the technique of writing first creates and then mediates" (1995, p.115). This is framed against the ability of hypertext to draw the author into the gap; a gap is the quintessence of interpretation, and a previously sacrosanct space for readers. Hypertext may be lauded for its gaps, its "discontinuities" (Saemmer, 2013,

p.31), but this thesis considers these to be fewer and more provisional in hypertext than those found in linear print.

The removal of such formal conventions found in linear print fiction only disadvantages the reader. Where Iser introduced virtualisation as the role of the reader, conventional hypertext fiction introduces a kind of *contingent virtualisation* – the reader knows there to be gaps at the present time, but also that they can be claimed or reclaimed by the author at any time. "The reader gradually builds a knowledge of these conceptual components through reading the text," say Kendall & Rety (2000, p.164) "and many of them may become clear only through contemplating or analyzing text elements in retrospect". Absent the exhaustive approach to hypertext resisted by most critics there can be no retrospection, since uncertainty about content (not uncertainty about authorial intention) persists even after reading is complete.

This increasing asymmetry undermines rather than liberates the reader. Hypertext's original architects sought to reduce the asymmetry between reader and author by granting them equal tools, clearly labelling hyperlinks and permitting those links to move beyond the boundaries of the work. User-editable hypertext with interoperability built-in is this approach personified. For all its mechanical similarities, conventional hypertext in both theory and application conversely deepens the asymmetry by allowing the author to persist within the work. In making the path of the reader opaque and finite, reading becomes the pursuit of meaning, reinstating Richard Holton's theological choice and becoming precisely the reading act Barthes and Foucault resisted. Conventional literary hypertext fiction reinstates what I will call the *quest paradigm*.

5.1.1.3 The Quest Paradigm

Reading as a quest for authorial intention was outlined in Chapter 3, unifying New Criticism, post-structuralist theory and reader-response criticism in their rejection of a single author-sanctioned meaning. Nehamas describes this view - that "to understand a text is to recreate someone's state of mind" – as "one of Foucault's ultimate targets" (1986), while Jakki Spicer (2005, p.388) concludes that 20th century literary theory on balance "jettisoned the notion of authorial intention as a primary focus in the interpretation of a text's meaning." In his 1974 work *S/Z*, Roland Barthes suggests that the goal of literary work should be "to make the reader a producer of the text" (p.104) rather than a consumer. Antiauthorism opposes the quest for a sanctioned meaning, but stand-alone, read-only hypertext fiction reinstates it, by encouraging

the reader to verify their interpretation against the author's intended meaning. Nehamas underscores Barthes' intention:

> We study literary texts in order to determine this (ideally) consistent and profound intention and thus to recapture the state of mind that led to their production. But this, Foucault argues, is an impossible goal which leads us in the wrong direction (1986).

Nehamas is arguing that making the act of reading a quest to identify the author's intention is the opposite of what the antiauthorists intended. If we make intention our only objective, then all we can do is try to "figure out what the designer had in mind" (Fish, 2006, p.20). To recall Nehamas again, this is "to ask… a certain type of question and to expect a certain type of answer".

If Landow *et al.* were correct, then surely a quest for meaning would be amongst the first victims of this brave new medium. Lev Manovich, however, describes the exploration of a computer interface as being to "identify with somebody else's mental structure" (2002, p.74), while, within hypertext fiction theory itself, it is commonplace to describe reading in terms of quests and puzzles (Yellowlees-Douglas, 2003, p.243; Murray, 2006, p.2). Discussing the process of reading *afternoon*, Yellowlees Douglas (1994, p.181) describes her slow rearrangement of "the macrostructure" as she begins to discern how the lexia are connected, which sounds very like the methodical recreation of the author's original structure. In contrast, Stanley Fish (1980, p.44) once scorned New Criticism's efforts to evaluate a work as a macrostructure, works he saw as bearing "no resemblance" to the actual act of reading. Hypertext fiction in fact encourages the reader to empathise more - not less - with the author; these conscious and unconscious echoes of author-privileging language highlight the phenomenology of reading conventional hypertext as distinct from the theoretical liberation it supposedly offers. Mark Bernstein gave Joyce's *afternoon* a second chance because the program chair of the second Hypertext Conference had praised the work; he in turn set out to "figure out what Halasz had seen – which meant, in turn, trying to understand what Joyce was trying to say" (2009, p.1).

This approach recalls the earlier discussion of Susan Sontag (see Section 3.1) and her resistance to reading as a search for meaning. In revalidating the search for meaning, however, literary hypertext fiction encourages a disengagement with sensual experience, and encourages a hermeneutic strategy that revalidates reading as a means of pursuing an authored meaning.

The hyperlink has been elevated by some as a tool for liberating readers, permitting them to find their own path through written material. The intentional ambiguity of these

hyperlinks, however, creates an uncertainty about the nature and extent of the work that undermines the reader's interpretation. This in turn permits the author to intrude into the reader's interpretative space, since the link less followed undermines any certainty the reader may have otherwise felt. This in turn makes reading a quest for an authorially sanctioned meaning which is sustained by two features of stand-alone, read-only hypertext: the rejection of closure and the privileging of confusion.

5.2 Closure & Confusion in Hypertext Fiction

On one level, closure may be defined simply as a sense of completion at the conclusion of a literary work. Like many terms explored in these pages, however, a simple definition masks hidden complexity. Barthes' *S/Z* offers a useful initial deconstruction of closure, in the form of the *hermeneutic code*.

The hermeneutic code refers to any element of a work that aims to "articulate… a question, its response, and the variety of chance events which can either formulate the question or delay its answer" (1974, p.17). Closure at any level can therefore be seen as relying upon two components: a question and an answer. "It was a bright cold day in April, and the clocks were striking thirteen", reads the first line of George Orwell's *1984*. Thirteen? Why thirteen? And immediately the reader has at least one question that will drive them through the work, with the author deferring the answer as long as they wish. Described as the "Voice of Truth" by Barthes, the hermeneutic code is a means of delaying revelation, something he dubs "narrative striptease" (1974, p.84) since the author delays the solving of each narrative enigma as long as possible.

Closure becomes another site of struggle between author and reader, as the former endeavours to hold off that satisfaction demanded by the latter. This struggle is reminiscent of Otlet's earlier frustration regarding work in the Social Sciences, in which the author (by rhetorical means) withholds information sought by the reader (see Section 4.2.3). A perverse consequence of the hermeneutic code, then, is arguably a false equivalence between answer and truth. By framing questions in a certain way – and encouraging readers to follow a line of argument toward an answer – a polemical author may lead the unwary reader to a convincing yet unsustainable conclusion. In Plato's *Gorgias,* the character Socrates argues that "the rhetorician need not know the truth about things; he has only to discover some way of

persuading the ignorant" (1987, p.19), and the author's power to present a question and answer to their own advantage affords this opportunity. Ignorant need not mean foolish or resistant to education, in Plato's world; ignorance is more lack of knowledge, itself merely unfamiliarity with a subject. It is possible, after all, to offer a suitably compelling argument that misleads even the otherwise educated and enthusiastic reader. The authority conferred by authorship was among the central concerns of those poststructuralists found in Chapter 3, who found the idea of claiming access to any universal truth anathema to their project.

Closure is historically under the author's jurisdiction, since they determine when and how questions are introduced and answered. Professor David H. Richter suggests that closure comes when the author's thesis is fully expounded, while poet Barbara Hernstein Smith sees it as the "appropriate cessation" of the work, when no further developments are justified (2007, p.15). While superficially different, both arguments can be seen as working together if we disentangle notions of closure from the reader's satisfaction. The clocks that strike thirteen are never fully explained in Orwell's *1984* (though it likely refers to a passage from Hardy's *Far From The Madding Crowd)*. Priestley never explains the identity of Inspector Goole, just as David Chase refuses to explain the final status of Tony Soprano. Appropriate cessation and a fully expounded thesis are therefore essentially the same thing, relying as they do upon the author feeling the work is complete and making this feeling clear. These unanswered questions generate indeterminacy, in which "concretization is left to a large extent to the reader's imagination" (Stanzel, 1986, p.116). Provided they are aware that the work can offer no further solutions, the reader is empowered to engage their full skills of interpretation. When Barthes describes ten complications that can delay our interpretation of a work, he lists only one that is not resolved within the work itself – *jamming*, an "exhaustion of available resources" (1974, p.209), in which the writer is no longer available and no further evidence can be provided to answer our questions. Unless there is a guarantee that no further developments are forthcoming, readers are not forced to take interpretation into their own hands. Would we still discuss the fate of the Sternwood Chauffer, had Chandler not in his alcoholism forgotten to explain his death?

What form of closure can literary hypertext fiction offer? Yellowlees-Douglas suggests it affords a level of indeterminacy "peculiar in extent and character" to interactive narratives (1994). Since each reader follows a different path through the narrative, their reading will result in questions and answers being encountered out of sequence. This leads Espen Aarseth (1994,

p.82) to declare of hypertext fiction that “after the celebrated deaths of the author, the work, and reading, the text is now giving up the spirit”. Readers of linear print fiction exist, writes Peter Brooks (1984, p.23), “in a spirit of confidence, and also a state of dependence, that what remains to be read will restructure the provisional meanings of the already read”. Nascent interpretations evolve and change as the story progresses, and it is only upon reaching the ending that the reader can be certain what interpretative territory is now truly *theirs*. Far from removing this dependence, the knowledge that further material exists - unread - within the work leaves us in a perpetual state of dependence. Even the reassurance of scope – the certainty of being ten or twenty pages from a concluding chapter – is withdrawn in literary hypertext fiction. As a feature of print’s physicality, this reassurance is something which hypertext cannot easily replicate.

Readers of hypertext fiction will encounter different questions depending on their path through the work – a particular reading of *afternoon,* for example, may yield the character of Peter and his complex relationships, while another reading may not. Questions are always balanced by answers – a single lexia may represent the resolution of Peter’s story for one reader, its introduction for another, but readers will require an initiating question and resolution in some form. The hermeneutic code is still in play, then, despite the possibility of encountering an explicit *solution* before its author-sanctioned *question*. When Barthes suggests that the hermeneutic code is dependant on temporal order (1974, p.30) he is insisting only that questions must precede answers. An answer that is not understood becomes a dangling question until its counterpart (the original question) is found, much as the television show *Jeopardy* still functions despite offering the answer first, or a joke’s syntax remaining consistent whether we hear the punchline first, or the feed. What changes is the order in which the components are encountered, but asking whether I want the punchline first is not an act of empowerment. Whether you choose to tackle the case of Mrs Macdonald by visiting the college or their residence in Robin Johnson’s 2016 IF award winner *Detectiveland* will ultimately yield the same outcomes, if only in different orders.

The reading of any literary hypertext fiction work ultimately concludes in one of three ways: *exhaustion*, in which the full extent of the work has been explored; *satisfaction*, in which the reader resolves any questions the work has raised; *abandonment,* in which the reader decides there is nothing further to be gleaned from the work. The following section will consider each of these in turn, considering them in the context of this evolving definition of closure.

5.2.1 Exhaustion, Satisfaction, Abandonment

The *exhaustive* approach involves laboriously pursuing each hyperlink, perhaps transcribing them in some material manner, until the full hypotext (underlying structure) is understood. This ultimate state is endorsed by Yellowlees-Douglas as the quasi-transcendent "all-at-onceness" (1991), in which the reader has a full command of the whole work's structure. Such a slavish recreation of the author's hypotextual macrostructure is entirely at odds with Barthes' original anti-authorist approach to reading. Readers of linear print fiction know that meaning is not "contained or guaranteed by the text", to borrow Liestøl's phrase, (1994, p.98) but it is the hypertext fiction reader whose certainty of the text's limitations or failings is forestalled. The hypotext approach is one that places power again in the hands of the author. A literary text must be "conceived in such a way that it will engage the reader's imagination in the task of working things out for himself" (Iser, 1972, p. 275) but this is in terms of interpretation, not a treasure hunt for meaning excavated materially from the work.

Framing the hypertext fiction work in terms of hermeneutics seems a conservative approach anyway, presuming as it does that the solutions to questions raised by the work must *de facto* exist within that work. This assumption about the recreation of embodied resolutions downplays the intellectual capacity of readers to resolve such ambiguities without literal, concrete textual solutions. When reading a story, says Nick Lowe, each successive word is added to a "running sum" of narrative information (2009, p.41). Interpretation, for Lowe, thus evolves and develops in real time. In principle, such a process might go on almost indefinitely – fan fiction work *The Subspace Emissary's Worlds Conquest* currently runs to over four million words, for example, while readers of George R R Martin's *A Song of Ice and Fire* series are eagerly awaiting the continuation of many plot lines left hanging. Closure can appear at multiple levels within the work – a subplot may conclusively end with a character's death, despite the main narrative continuing for some further length. Despite this, the finite nature of the work can be seen as a guarantor that the story will conclude, an "anticipation of retrospection" that for Peter Brooks represents "our chief tool in making sense of the narrative" (1984, p.22). Only when the work is concluded are we certain of its contents. Jane Yellowlees Douglas interprets this as describing a kind of hermeneutic stasis, in which the reader suspends judgment until the work is complete; the narrative "physically has nothing left to reveal", which leaves her "free to begin to make sense of the work as a whole" (2009, p.64). Yellowlees Douglas uses this to foreground what she sees as an inability of literary theorists to accommodate modernist writing

into their understanding of closure: “in twentieth-century fiction stories may ‘end’ long before the narrative finishes on the last page of a book, making it difficult for us to perceive just to which ‘ending’ it is that [literary critics] Brooks, Benjamin, and Kermode refer” (p.62). This approach in turn allows for the multilinearity of literary hypertext fiction to be framed as modernist, since it is being contrasted with an unlikely version of linear print fiction reading, in which we suspend our understanding of a work until it is fully concluded. In practice, various lacunae reveal themselves as we read, which we ponder even as we continue, and if we follow Sartre in seeing reading as “directed creation” (1948, p.32) then it is Yellowlees Douglas who underestimates the reader’s imaginative real-time filling of these gaps. Do readers really regret their distrust of Severus Snape from the first of J.K.Rowling’s *Harry Potter* novels because its conclusion recasts him as a tragic hero? To suggest they were wrong to draw this conclusion because future material might invalidate their interpretation favours the author’s meaning over the reader’s understanding, since the reader is entitled to their reading of a work even if future material does negate it. Michael Joyce describes reading hypertext as recreating “the writer’s experience of rereading in the process of composing printed works” (2009, p.156); each return to a previously read section invests it with additional meaning derived from the rest of the work. This is the reverse of the author’s experience, however. An author invests previously written passages with newly generated meaning, while the reader abandons their interpretation in favour of a single, concretised, authorially-sanctioned meaning.

Assuming that the reader acknowledges the work as the source of solutions to its own questions, but not the process of fully absorbing the hypotext, then they have two remaining options through which to explore the sense of closure: read until all active questions are *satisfied*, or *abandon* the work and the pursuit of answers. These two forms of closure warrant exploration, since neither can be said to truly reject the presence of the author.

Looking first at *satisfaction*, it is clear that the reader need not have encountered all questions the work may ask to achieve this state; only that the questions they have encountered are resolved to their satisfaction, what Yellowlees Douglas (1994, p.169) describes as “a resolution of the tensions which, initially, give rise to the narrative”. In some respects this is similar to the hermeneutics of linear print works. The primary difference between linear and hypertext works in this case seems to be that, as argued in the preceding section, hyperlinks imply questions unidentified or solutions unexplored. Arguably the navigation of most hypertext is defined precisely by this potential. Yellowlees Douglas argues that an initial reading of

afternoon may leave the character Peter's "quest for information" open-ended (1994, p.168), a quest (or quest*ion)* which becomes by extension the reader's quest. We always read in the awareness that our reading is incomplete, since there still exists material that might undermine a particular interpretation. Unlike linear print works, however, the hypertext reader is never expected to resolve this tension in one reading. Any sense of tensions within the work being resolved extratextually is ultimately coloured by the potential existence of intratextual material that might impinge on or shape our interpretation on a second, third, or hundredth reading. Delany and Landow (1995, p.6) are correct that the printed book as a unit is "largely determined by its traditional status as a physical object," but I do not take this as a criticism. The finite nature of the book guarantees that there is interpretative space for the reader; its materiality is a restriction on authors, not readers.

If the indeterminacy found in literary hypertext fiction does not undermine the author, then perhaps we can fall back on Barthes' other boogieman - the critic. In many ways, Barthes' antiauthorist critique was directed at critics and their use of biography to impose their interpretation on a susceptible reader (see Section 3.1). Does the material structure of literary hypertext fiction emphasise or undermine the critic's claim to authority? Yellowlees-Douglas (1994, p.162) suggests that literary critics are unable to account for "highly indeterminate" endings, because they rely on the notion of closure. Since a reader (critic or otherwise) will always take their own route through the work, there can be no guarantee that a reading will result in the satisfactory conclusion upon which Yellowlees-Douglas claims critics rely. This timid critic, unable to survive without satisfactory closure, is an obvious straw man, particularly when it comes to modernist literary fiction. Mikhail Bakhtin was perfectly comfortable with plot as a "service function" (1963, p.100) to the open-ended exploration of ideas within a novel, ideas which he did not feel need be resolved within the work. Frank Kermode's *The Sense of an Ending* (which Yellowlees Douglas references in her own work) may indeed have emphasised our *desire* for closure, but his later work *The Genesis of Secrecy* (which makes interpretation its subject) contrasts "vulgar notions of cause and closure" (1979, p.15) against the superior virtues of indeterminacy. Critics seem perfectly willing to acknowledge their own subjectivity and the varying indeterminacy of the written work.

Part of this confusion seems to derive from a fuzzy description of open-endedness. Bolter, for example, argues that modern fiction favours experiments with open-endedness, before noting this is "precisely the quality that the computer lends to all writing" (1991, p.121). There

are two definitions of open-endedness here, however: one philosophical, one material. Modernist literary fiction exhibits a *philosophical* willingness to leave questions unanswered within the work, whereas literary hypertext fiction offers a *material* form, in which a plurality of questions are raised and the answers are dispersed chaotically through the work. A reader of John Fowles' *The Magus* may complete the work without a clear sense of its meaning, while readers may explore *afternoon* for hours without answering the questions it raises. Unlike linear print fiction, readers rarely run out of material in hypertext fiction upon which to base their interpretation. Linear print fiction conclusively ends, with any further questions "left to a large extent to the reader's imagination" (Stanzel, 1986, p.116). Novels end; films end, but literary hypertext fiction prides itself on forestalling these ambiguous endings, even celebrating this fact. We may resolve one mystery as we pass from hyperlink to hyperlink, but each lexia contains the potential for more, further questions. In linear print fiction completion does not guarantee closure in a hermeneutic sense, while in conventional hypertext fiction closure (in the sense of abandonment) does not guarantee the work has been read to completion.

"Endings [in linear print fiction] confirm or invalidate the predictions we have made about resolutions to conflicts", says Yellowlees Douglas (1994, p.161). This misrepresents linear print fiction as always offering solutions to its questions, permitting it to be contrasted with literary hypertext. Critics of linear print fiction are quite comfortable with offering their perspective on works that resist traditional interpretation, or offer up its contents in an unexpected order. If anything, it is the hyperlink that confirms or invalidates predictions made by the reader, since we select lexia on the assumption that it will improve our understanding of the work. If it is not navigation that undermines the critic, then it must be scope, since a work whose every lexia can be explored is one whose indeterminacy is of the same order afforded by linear print. There is general agreement amongst theorists (Landow, 1994, p.34; Aarseth, 1994, p.82) that an inability to master the whole work in hypertext fiction reduces the critic's view to one subjective reading among many. Your path through *afternoon* is no more worthy of study than my own.

This subjectivity is an approach familiar from reader response criticism, however, and not somewhere that conventional hypertext fiction particularly triumphs. "Jane's Space" is a node within *afternoon* that has no inbound links; identified by Jane Yellowlees-Douglas, this node became part of "*afternoon* lore" and a note added in the third edition reads "and only Jane Yellowlees Douglas has read this screen" (Harpold, 1994, p.192; Kirschenbaum, 2008, p.181).

If the role of the critic is to know the work better than the common reader, offering analysis from this position of expertise, then Jane's Node seems to me a clear continuation of that logic. Note also that one of the virtues talked up by Landow & Delany (1995, p.7) among others is that a scholar can link the biographical details of a writer's work using hyperlinks, simultaneously emphasising both scholarly or critical interpretation and the importance of the author's biography (see Section 4.3.1).

Exhaustiveness of reading becomes another claim to authority – a bravura display of critical stamina. It could also be argued that the extensive critical attention lavished upon particular works like *afternoon* has merged the roles of critic and author anyway, the essential characteristics of such works taken for those of all hypertext fiction. The traditional route to the status of authority on a particular work remains the same – extensive and exhaustive study, over as many sessions as proves necessary. Literary hypertext fiction cannot let go, making repeated visits to the work a fundamental part of its structure.

Rereading as essential to reading literary hypertext fiction is well established. Readers of literary hypertext fiction, Yellowlees Douglas (1994, p.185) suggests, will revisit works again and again, since hypertext fiction's "openness and indeterminacy" means there are innumerate endings available. Marie Laure Ryan (2006, p.109) similarly argues that readers can seek coherence only over multiple passes of a hypertext fiction work. Landow too relies upon rereading to ensure that our choices are not "arbitrary picking", to adapt Richard Holton's phrase (2006, p.7). Bernstein *et al.* (2002) suggest that context is the key to effective writing, suggesting that "merely choosing nodes at random seems an unpromising rhetorical strategy", while Silvio Gaggi notes that each successive reading "may suggest different meanings" (1997, p.122) which again implies that meaning (or a series of meanings) can be derived, piecemeal, from the work. Describing her experience of reading *afternoon,* Jill Walker first describes "haphazardly" clicking, before abandoning the work. Upon reading the instructions, however, she uncovered a linear path through the work by obediently clicking. To enjoy *afternoon* meant to give up any sense of "reader's choice" and instead follow the author's arranged default reading (2009, p.22). This is not merely the *same* as a linear novel, but *worse*: she is consciously aware of the author's presence and guiding hand. This submission echoes Landow's description of the novice's relative ease at reading an informational hypertext (see p.131) and seems to confirm the assumptions of the theorists above: that the choices are arbitrary until they are fully understood, at which point they become meaningless.

It seems strange that these commentators want to unravel endings and narratives, since each reading (however brief or incomplete) should by definition be equally valid. Why is all this necessary? Arguably rereading *is* a privileged concept in literature. “One cannot read a book,” argues Vladimir Nabokov (2002). “One can only reread it. A good reader, a major reader, an active and creative reader is a rereader.” This approach could be used to legitimise the rereading strategy found in literary hypertext fiction, but Nabokov is arguing that reading does not truly begin until we know the extent of a work. The question "how do we read electronic literature or literary hypertext?" has been widely explored (Gardner 2003; Gunder 2004; Kaplan and Moulthrop 1991; Mangen 2006; Miall and Dobson 2001; Moulthrop 1991; Page 2006; Ryan 2001; Snyder 1997), but critical consensus (Bernstein, 2009; Landow, 2006; Thomas, 2007) agrees that reading hypertextually is all about this returning to the same lexia over and over again in pursuit of closure. This focus on rereading emphasises the idea of an incomplete interpretation, with the goal of adequately mapping the author’s hypotext. This approach undermines the apparent virtue of hypertext’s multilinear labyrinths. Historically it is the reader, not “the invariant text” that changes upon re-reading (Garef, 1998, p.21), and to change that invariant text (as hypertext does) is to undermine, not facilitate, active readership.

Reporting on their survey of rereading in hypertext fiction, Alex Mitchell and Kevin McGee (2012, p.105) observed a similar tension between whether it was “the text or their understanding of the story” which readers felt must remain the same for their experience to be considered rereading. They concluded that rereading in hypertext fiction requires one of two areas to be consistent: the text, or the readers’ understanding of the story (p.109). In the former case, rereading must not yield new written material (only new interpretations); in the latter case, new material must not substantively change the reader’s understanding of the story. This framing of rereading is an issue for literary hypertext fiction, since “there is potentially *nothing* which the reader can readily point to as constant between reading sessions” (p.110). This lack of certainty, in my framework, undermines the reader.

Bernstein offers what I consider to be a quintessential statement of this paradox: “it is only through repeated readings, by revisiting lexias under different contexts, that the fragments of text gradually coalesce, allowing the reader to assemble his or her own idea of the events of the story” (2009). The suggestion that this piecemeal approach, this slow coalescing of fragments is not a hunt for the author’s meaning, but a creative act on the reader’s part, seems unsustainable.

What criteria are readers using to decide that a work has been "completed" to their satisfaction? Robert Kendall & Jean-Hughes Réty believe that readers of hypertext fiction are "aware of whether the growth process is unified or chaotic, varied or monotonous, rich in surprise and suspense or predictable, fast or slow paced" (2000, p.163). This very speculative passage does not suggest that the reader stops reading because all their questions have been answered; rather they are abandoning the work because they have simply lost patience or interest. Of linear print fiction, Iser suggests that only "boredom and overstrain" would lead a reader to abandon the work (1972, p.956) and there is no reason to believe that conventional hypertext fiction represents something different. Works offering a forestalled search for completion are the enemy of indeterminacy, which does not privilige any particular interpretation but leaves gaps which the reader knows they can fill themselves.

Despite this, hypertext fiction is supposed to be read again and again, the same passages revisited in search of unexplored paths. Repeatedly returning to the work for verification of a particular reading, which Harpold (1994, p.192) optimistically describes as "hoping to find the path between lexias that will close a question left open by a prior reading", is repeated submission to the author's dominance, and cannot be considered evidence of satisfactory closure. When Yellowlees Douglas (1997, p.114) describes storytelling in stand-alone, read-only hypertext fiction as "and/and/and", an unending sequence of lexia, it recalls the rambling and incoherent storytelling of young children. The *exhaustive* strategy cannot triumph where the work is so indefatigable, and this section has argued that the reader cannot achieve *satisfaction*. Two of our three strategies for completing a literary hypertext work therefore fall to the author. An infinite story is one from which the reader can never be liberated, for which reason I consider *and/and/and* to be synonymous with *therefore.* And the only escape from storytelling's eternal *therefore* is *abandonment* by the reader.[23]

The *abandonment* approach is the true end for any non-exhaustive reading of conventional hypertext fiction, and the strategy with which critics seem most comfortable. Witness the strange glee with which Yellowlees-Douglas describes readers "drop[ping] like flies, bewildered, puzzled, angry, lost" (1991), or Gaggi's assumption (1997, p.123) that the frustration of being "unable to answer a question or resolve some mystery evoked by the

[23] The *abandonment* strategy becomes complicated when discussing change at the fabula level, as is the case with guard fields and dynamic hypertext, but this does not fundamentally alter the consequences of this concern (see Section 6.1)

narrative" is the price readers pay for literary hypertext fiction's affordances; a mystery, it should be clear, that the author set up in the first place. Like others (Bell, 2010; Ensslin, 2007), this approach does not strike me as indicative of an empowered readership rejecting the dominance of the author, but of a readership whose confusion is disempowering.

Acknowledging that conventional hypertext presents readers with "a new kind of textual randomness", Delaney and Landow (1995, p.9-10) suggest the writer experiences a parallel loss of basic controls: "The text appears to break down, to fragment and atomize into constituent elements", they argue, with reading units taking on a life of their own as they "become more self-contained because [sic] less dependent on what comes before or after in a linear succession". How genuinely random are these connections? They are not, in this model of hypertext fiction at least (see Section 5.1.1). The *appearance* of breaking down is again equated with reality, where in fact the work possesses more coercive power over the reader than the author is willing to acknowledge. The perverse pleasure in the reader's confusion may seem less palatable when it becomes an authorial choice rather than a necessary byproduct of a hypertext system.[24]

If completion (and satisfaction) is unattainable, then what consolatory liberation can be found in that confusion and bewilderment considered the paradigm for reading literary hypertext fiction? Confusion in everyday life is not an empowering state, after all. To understand this paradox it is necessary to take a brief sidestep into the literary theory that framed Chapter 3. If modernist literary fiction is seen as the model for literary hypertext fiction's approach, then understanding the philosophy underpinning such works is useful here.

Speaking again in general terms, critical theorists of the mid-twentieth century rejected the wider idea of what Lyotard had called "incredulity toward metanarratives" (1993, xxiv), a distrust of any work that promised access to universal truths. In their place, writers in the modernist tradition are generally held to offer individual truths, peculiar to a particular time and place. "An artist", says author D H Lawrence (1923, p.14), "is usually a damned liar, but his art, if it be art, will tell you the truth of his day. And that is all that matters. Away with eternal truth." For modernists, any claim that a work might offer something approaching a universal truth was

[24] Countervailing efforts to offer meaningful endings within the hypertext fiction work have met with mixed success. In Christine Wilks' 2010 work *Underbelly*, for example, a key revelation is followed by the question "are you satisfied with the outcome?" Answering "yes" will take the player to the credits. In practice this is the worst of both worlds: an authorial intrusion to offer a very leading question, for which answering in the negative simply thrusts the reader back into the narrative world, now certain the author is disappointed at their inattention.

suspect, though a work might still articulate the truth of a particular time and place. Postmodernism, by contrast, expressed the same incredulity toward metanarratives, but questioned the coherence (and therefore value) of *any* author's quest for truth. Reality was a chaos of subjectivity, and anybody claiming to have found even elementary universality could not be relied upon. In a 1966 essay Jacques Derrida (p.278) argued that we should embrace the chaos that comes with the neutralisation of any organising principle, whether that be metanarratives derived from social structures, or the valorisation of the individual author or critic that similarly vexed Barthes and Foucault. Indeterminacy in modernist literary fiction may be seen as a manifestation of these ideas, since refusal to offer satisfactory, some might say platitudinous closure is to encourage the reader to favour their own interpretation.

How does this argument about indeterminacy and the pursuit of truth affect conventional hypertext fiction's liberation claim? The paradoxical relationship between confusion and liberation arguably originates in this theoretical position: that by removing the comfort of structure, the reading subject is forced to embrace a more chaotic and therefore liberating work. Contradictions and confusion become part of the same outlook that led literary scholar Barbara Johnson (1980, p.5) to define the verb *analyse* as "to undo".

Schooled in literary theory, writers on literary hypertext fiction echoed this distrust; Espen Aarseth (1994, p.81) rightly notes the academic preference for "subversive anti-narrator" works like *afternoon,* and an associated distrust of the more "prosaic" video game. Landow (1991, p.117), citing hypertext's requirement that we "fabricate a whole story out of separate parts", argued that readers will extrapolate from this artifice to the author's fabrication of "individual sentences and entire discourses from another's grammar, vocabulary, and syntax." The reader's attention (in other words) is drawn to the constructed and unreliable nature of the work. In keeping with this postmodern flavour, Rosello suggests that hypertext fiction tends towards the "self-reflexivity" of the 18th century novel (1994, p.143), authorizing readers to rest between chapters, or commenting on the complexity of a long passage. Literary hypertext fiction readily acknowledges its artifice too, as in *afternoon*'s self-conscious observations about its Leviathan structure:

> When the story no longer progresses, or when it cycles, or when you tire of the paths, the experience of reading it ends. Even so, there are likely to be more opportunities than you think there are at first. A word which doesn't yield the first time you read a section may take you elsewhere if you choose it when you encounter the section again; and sometimes what seems a loop, like memory, heads off again in another direction. *Work in Progress* (Joyce, 1987)

This acknowledgement serves only to highlight that this asymmetry is exacerbated in literary hypertext fiction. Efforts to directly address the reader, guiding them with contextual clues toward a significant or valuable observation, represent an additional layer of intrusion into the reading process, whether self-consciously acknowledged or otherwise. This hypermediacy (a term defined by digital media theorists Jay Bolter and Richard Grusin as "the style of visual representation whose goal is to remind the viewer of the medium" [2000, p.272]) does not negate the need for readers to engage with the work, and authorial bullying cannot be met with anything but readerly obedience. T.S. Eliot's *The Wasteland* asks readers to look elsewhere for clarification, but hypertext offers clarification precisely through its system of hyperlinks. A labyrinth is no less real for its designer pointing out the walls, particularly since its structure offers no opportunity for escape.

This jealous claiming of context is embedded in the positivist logic of hyperlinks. Postmodernist literature, says William Spanos (1972, p.148) "refuses to fulfil causally oriented expectations". There is, however, a causal link between the hyperlink and the destination. The logic of the hyperlink is one of causality, since selection always yields revelation. A computer programmer may build failstates into software, but the hyperlink is conventionally binary – it must exist, or it does not, in any given moment, even where conditional rules may render it available or otherwise. There is no ~~link~~, to borrow Derrida's framing; there is only the link (see Section 4.3).

Hassan (1987, p.10) suggests that the postmodern text is "preoccupied with the quest for understanding the self", just as modernism was preoccupied with turning inwards upon the creator. If hypertext fiction can be considered modernist, perhaps it is at this level – its obsession with the self of the author – that it best succeeds, simultaneously undermining the ambitions of Barthes and Iser. "We are associative creatures. That's what we do" writes Michael Joyce (2011), but in conventional hypertext fiction we privilige the associations of the author, not the reader. If all mediated narrative is "something which we both stare at and through" (Hawthorn, 1985,viii) then hypertext's self-consciousness is no different to that found in other modernist literature, and we must move on, to the quality of the choices it offers, in search of empowerment for the reader.

If endings cannot liberate, does moment-to-moment confusion perhaps offer some form of liberation for the reader? The previous section noted that blatant linking was largely rejected by scholars in favour of opaque connection, obscuring the likely outcome of a reader's decision-

making process. Without the clarity that blatant linking affords (and therefore the clarity of the author's intention), the reader is left with an array of possible paths and no way to rank them. Given the information asymmetry that already exists between author and reader, I would suggest that most readers are using navigation as a means of verification through the text. Selection of the hyperlink *poetry* in *afternoon* is motivated by the certainty that this connection is meaningful to the author, and the desire to prove or disprove our assumption about that connection. The more we read, the greater our chance of resolving the tensions that Yellowlees Douglas felt so defined our desire for closure. Believing we understand an author's intentions, we select a link and see whether the destination supports or rejects our emergent reading. "While links are also the means of moving the reader onwards," notes Wendy Morgan, "the particular function of any link may be known with any certainty only retrospectively, after the reader has traversed that link" (2002, p.227). Returning to *afternoon,* a new reader may find themselves clicking on the links to the section titled *ritual godhead* or *mastodon*, believing there might be some underlying subplot about faith or time travel. These reader-imagined subplots are abandoned when their absence from the wider work is discovered.

This argument works for both sides of the hyperlink: seeing the word *firework* highlighted in Stuart Moulthrop's *Victory Garden*, for example, may cause a reader to abandon his or her own ideas in favour of a term the author chose to make significant. In a similar vein, I was advised as an undergraduate to avoid naming, say, the bartender in a single scene, since it might lead the reader to assume that this character held special importance; so the hypertext fiction author places undue emphasis on the linked terms, thereby directing the reader blindly through the narrative. Once again the same apparatus said to destabilise the author (the hyperlink) is in fact reasserting their dominance; conventional hypertext fiction provides an opportunity for the reader to be demonstrably "wrong". It is with the notion of the reader as engaged in a creative act of decision-making that this section is concerned, a claim found in literary hypertext fiction. The intentionally fragmentary nature of the hypertext fiction work is disruptive of readerly interpretation, a situation not remedied by the superficial choice-making that opaque links could afford.

This section evaluated the relationship between closure and confusion in conventional hypertext fiction, arguing that these networked texts privilege the author in two ways. Firstly, unread hyperlinks are overdetermined, replacing indeterminacy (in which no answer can be found within the text) with uncertainty (in which no answer has been found … yet). Secondly,

intentionally opaque hyperlinks encourage the reader to see interpretation as a cycle of repetition and exploration, revisiting the same ground each time with a better understanding of the author's intention. Both these approaches see the act of reading as a quest for an author's intended meaning. The maze is solved by being learned; we must memorise its structure until we understand its schema. The choices we make are efforts to understand this structure.

Hyperlinks represent a strange paradox. They are generally held to be the mechanism by which choice is offered (Cantoni & Paolini, 2001, p.42; Joyce, 1995, p.581; Landow, 2006, p.15; Thomas, 2007, p.366) but these are choices to which the reader can return again and again until they know what the author intended, and can therefore get the answer "right". These choices therefore carry no weight, since they can be repeated indefinitely. It is the shallowness of literary hypertext fiction's hyperlinks that creates this problem, their opacity that undermines the reader's freedom, and it would be preferable to offer no hyperlinks at all (or hyperlinks with meaningful labelling) over breadth of choice without depth. Liestøl (1994, p.112-117) calls hyperlinks "indirect and ambiguous", which is only half right. Hyperlinks may well be ambiguous, but they are certainly directive, with the consequence that readers know *what* they are permitted to do but not *why*. The reader's confidence is inversely proportionate to their reliance on the author; as they become more confident in their choices, they become less reliant on the author's validation or verification. It is therefore the nature of these hyperlinks that is significant, rather than merely their presence.

Underpinning the preceding section was an exploration of the choice mode afforded by hypertext fiction. Beneath this runs a deeper question: do hyperlinks offer meaningful choice at all? In a 2007 essay, semiotician Sabrina Mazzali-Lurati sought to explain the semiotics of hyperlinks, in turn raising the same issue of significance and the function of hyperlinks. Hyperlinks, she concluded, function as invitations, consisting of both "a proposal⋯ and a promise of relevance" (p.138). The aforementioned *poetry* link in *afternoon* proposes itself as a selectable option, and promises that its contents will be relevant. While not mentioned in these terms, this distinction maps closely to Roland Barthes' hermeneutic and proairetic codes – the unanswered questions and promises of resolution found within a work (see Section 5.2). Hyperlinks function as navigational rules, implicit instructions for how the story may be pursued. Recognising this, Mazzali-Lurati seeks to identify existing frameworks to understand these rules, arriving (p.143) at John Searle's regulative and constitutive rules.

In keeping with other theorists (see Section 1.3.6) Searle (1995 [1969]) sees language as governed by rules. His essay seeks to distinguish between what he calls *regulative* and *constitutive* rules. *Regulative rules* are those that exist independently of language, often as imperative statements or "in the form '*Do X' or 'If Y do X'*" (1995, p.33). *Constitutive rules* are reliant on context: "*X counts as Y in context C*" is Searle's formulation. "If you are in America, drive on the right" would be regulative; "moving this piece counts as checkmate in context of Chess" constitutive. Checkmate cannot be achieved without first understanding the function of the various pieces on the board. Mazzali-Lurati uses Searle's binary to argue that, while hyperlinks may appear at first sight to be regulative ("To have information about [a given topic or issue] click on this link"), they are in fact constitutive, since they "define both the possible directions in the communication and…the user's process of interpretation" (2007, p.144).

This approach downplays something identified earlier in Mazzali-Lurati's essay – that the hyperlink as a rhetorical mechanism can be separated from its written content. The *hyperlink* is the promise of relevance, a purely regulative mechanism for structuring knowledge, while the textual content is *constitutive*, since this written word or words have a meaning unique to their context in the work at hand. This separation is a restatement of earlier arguments regarding positive and negative liberty (see Section 1.3.2). The function of the hyperlink can be stated in terms of regulation – *if a hyperlink is selected, the page will load* – which in turn aligns it with Berlin's positive liberty, since the hyperlink is the "source of control or interference" which controls what we can access (1969, p.121-122). Pursuing this logic, we might ask whether constitutive rules have a relationship with negative liberty. Following the logic found when exploring literary theory (see Section 5.1.1) we can consider negative liberty in terms of those spaces within the work over which the author has no control. The *constitutive* rules are (for Mazzali-Lurati) those hypotextual patterns that the reader must understand in order to interpret the intended outcome of pursuing a particular hyperlink, perhaps through the multiple re-readings popularized above. By setting the constitutive rules of a hypertext system, notes Mazzali Lurati, the author "remains present in the hypertextual dialogue more than he can in other kinds of asynchronous communication" (2007, p.137). The potential for absence in hypertext is thwarted by its mechanisms of control. This is positive liberty imposing itself upon the negative liberty of a normal written word. An inferred connection between knowledge areas is made concrete, thus imposing on a previously neutral interpretative space. Positive liberty is

regulative, outlining potential outcomes from which the user is “free” to choose; negative liberty acknowledges the constitutive, since it resists the idea that rules can coherently offer choice.

5.3 Modes of Choice in Hypertext Fiction

Let us take a step back and ask: what manner of choice is being offered by stand-alone, read-only hypertext fiction? Professor Richard Holton (2006, p.3-13) draws a distinction between first and second level choices (see Section 1.3.3). To which category do hyperlinks belong? Consider this example:

Choice Choice Choice

Absent the content of the hyperlinks themselves, these options clearly fall into the first level: we pick up on certain cues (a blue underline or activated mouse cursor, for example) and make our selection. There can be no meaningful difference between these hyperlinks. Meaning, then, derives from the *content* of these hyperlinks; the text that we use to identify them. The unknown destination cannot be a choice. It is possible to imagine a version of the above figure that offered greater challenge – perhaps one in which each hyperlink activates and deactivates according to a random timer – but that would not make it a second order choice. Hyperlinks do not in themselves offer choice in a meaningful way, but are vehicles to facilitate meaningful choice.

Mechanical sophistication should not be confused with sophistication of choice; as Holton argued, a medical professional’s choices are often of the first order (see Section 1.3.2.1). Navigational complexity or skillful use of a system is not necessarily indicative of a complex decision-making process. Readers of hypertext fiction are commonly assumed to become more adept at navigating internal hyperlinks (Landow, 1997, p.117; Bernstein, 2000; Modir *et al.*, 2012) as they become used to the system, but this is different to the mechanism identified by Wolfgang Iser in linear print fiction, in which common structural conventions guide the reader towards an intended meaning (1976, p.61). Navigation of hyperlinks is different to interpretation of hyperlinks, and skillful navigators are not necessarily skillful interpreters.

When George Landow (2006, p.150) suggests that confusion within a system can arise from *either* poor design or overcomplex material, he is unintentionally alluding to this conceptual independence. Multilinearity and textual fragmentation may demand “greater and more complex

interpretation work" from the reader (Mazzali Lurati, 2007, p.166), but a poorly designed system and a complicated argument are cognitively taxing in distinct ways, with only the latter falling under the discussion of choice. With this in mind, consider the opening passage from Travis Megill's 2003 work *Vacuum*, hypertext fiction in the stand-alone, read-only mode:

> The steps leading to her son's apartment were caked in mud, so Beth stepped carefully on the bare spots as she worked the car keys into her purse. She was late. Beth hated being late, and hoped the nurse from the Way Station wasn't already there, bringing Jacob's dinner or cleaning his apartment. The woman always seemed to show up when Beth was visiting, interrupting the time she spent with her son.
>
> There was no answer at the door, so she let herself in. The curtains were closed and the only illumination was the slow flashing of Christmas lights. Jacob kept the fake tree, only a few feet tall, sitting on a table by his television. Year round, its cheery, flashing lights fought to hide the ash and stains that made patchwork of the carpet. Beth had bought the tree for him. (Megill, 2003)

Five choices are offered within the scope of this passage: *late, Way Station, show up, in, bought the tree for him*. In the first instance, are these first or second order choices? Our options are certainly limited in scope, since we have only five; we know this because contextual clues tell us so. So far, so first order. What of the second? For Holton, second order choice hinges on deliberation and judgement, which leads to decision and action. We consider our options and decide what is the best course. Let us therefore consider these five hyperlinks in this light. Each is provided in context (we know that the Way Station has a nurse, that Beth bought the tree) but there is not enough information here upon which to base either a decision or a prediction, and therefore upon which to make a judgement.

Without decision and judgement, these choices are missing the "necessary components" of second order choice (Holton, 2006, p.15), thus becoming automatic. Readers of hypertext fiction often describe themselves reading each passage intently before selecting a link almost at random, working their way through and collating information as they go. Small wonder, since they are engaged in what Holton calls "arbitrary picking" - choices unmotivated by a need for judgement (p.7). Wolfgang Iser recommends that any effort to understand the act of reading should "start with the way in which sequent sentences act upon one other" (Iser, 1974, p.276), and in hypertext fiction we know that clarity comes from the destination, rather than the origin of the hyperlink. Terence Harpold (1994, p.197) describes destination lexia as introducing narrative discontinuities "in ways that cannot be predicted prior to that rupture". The originating hyperlink rarely offers clarity, instead functioning as a tool of authorial emphasis.

Considering the preceding passage from *Vacuum* without the hyperlinks, I find that the removal of authorial emphasis around certain terms removes that foreboding sense of a

hierarchical structure. By removing choice from the reading act, a more sophisticated form of decision-making emerges – that of readerly (not authorial) emphasis. When Holton describes second order choice as being "slow, demanding but more flexible" (Holton, 2006, p.3) I recall the earlier discussion about interpretative space, in which indeterminacy was described as a situation in which "concretization is left to a large extent to the reader's imagination" (Stanzel, 1986, p.116). Reading *Hamlet* may permit me no latitude in navigation, since it must be read in order, but the reader is at least assured that they have complete information – my interpretation is based on no more or less data than any other reader at that point, just as Iser's two stargazers based their interpretations on the same fixed field of stars (see Section 3.1). There may be other paratextual elements (author's notes, the age of the paper etc.) that affect interpretation, but these are of relatively minor significance. The certainty of virtualised material allows the reader to develop a response – whether emotional or intellectual – to the events that have unfolded so far.

Choice is meaningful only if the other outcomes remain unknowable; so Holton (2006, p.15) concludes. It is in this way that our actions are shown to be meaningful, since when our actions are without consequence, they have no weight. The existence of other options renders my choice meaningless, since judgement is not final – I might return to this choice point and remake my decision later. In hypertext fiction the road untravelled still exists, instantiated but unvirtualised. Bolter (2001, p.3) argues that electronic writing "reduces the distance between author and reader". It is not, however, by "turning the reader into an author" but by permitting the author to remain as a ghostly presence within the interpretative space of the reader, through these repetitions and potentialities. Sabrina Mazzali-Lurati has described hyperlinks as a "strategy of manifestation" (2007, p.138), permitting connections between knowledge areas to be highlighted to the reader. In a metaphorical sense, however, this is also the manifestation of the deceased author, a ghostly presence within the work.

What happens, then, when a reader has an emerging sense of what the author intends? As already argued, they begin to test their interpretation against what they believe to be the author's "meaning". Certainly this is arguably a *form* of second order choice, since these decisions are motivated by something other than arbitrary picking, but what kind of motivation? Only one of Holton's several modalities of second order choice (see Section 1.3.3) sees choice as a test, a form of choice that can be proven wrong: the *theological* form. Theological second order choices constitute a test which "in failing to err we can pass" (Holton, 2006, p.6) and is the

only form in which choice can provoke an objectively wrong answer. It is a form of choice rooted in submission, since it relies upon a God whose command of the full consequence of any action is total. The question here becomes whether such an artificial choice grants sufficient freedom for the subject to make a meaningful decision. Susana Pajares Tosca describes the hyperlink as possessing "a sort of 'suspended meaning'… it is a mere indicator: 'there is meaning here; explore the context'" (Pajares Tosca, 2009, p.109-110). It is by exploring the context that we can discern the meaning we are supposed to take away.

This, in essence, is the crisis for conventional literary hypertext fiction. Restrictive options are offered that nonetheless require a choice to made, despite offering insufficient evidence and a closed set of options. The existence of a hypotext whose topology is fully under the author's control means the reader is in a perpetual state of verification, matching their emerging interpretation against a concealed structure. Gaggi suggests a reader's path may coincidentally give the "appearance" of complete closure (1997, p.123), but this is still the reader deciding that they have understood the author's elusive meaning. Hypertext does not explicitly prohibit a reader's negotiated or oppositional interpretation; instead it nudges, guiding us towards a preferred conclusion. A nudge, as defined by Professors Richard Thaler and Cass Sunstein (2008, p.6), is "any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options", and it is in this way that hypertext can guide the reader without consciously sacrificing its ostensible neutrality.

Presented with a hyperlink whose destination we do not know, it would be tempting to recall Liestøl, Miall, and my earlier discussion about significance (see Section **Error! Reference source not found.**). As that section argued, the *galaxy of signifiers* are not a star field of infinite interpretation, as Iser might describe it, since each signifier has a solid, concrete referent. We may speculate about the ultimate destination of a hyperlink, but until we have selected it we cannot know. It is for this reason that the hyperlink cannot be considered a floating signifier, as has sometimes been suggested.

Floating signifiers are described by Claude Levi-Strauss (1950) as possessing "an undetermined quantity of signification, in itself void of meaning and thus apt to receive any meaning." The term *oomph*, for example, provides a concrete term for a wide range of taste sensations. A floating signifier hinges on subjectivity, since the signified exists in the mind of the interpreter, which would reinforce the argument that hyperlinks favoured the reader's

interpretation. Since hyperlinks *do* possess a referent – the lexia to which they are linked - these signifiers can be considered "floating" only until selected, at which point they become pinned to the author's intention. This ambiguity existed only in the mind of the reader – a sense of control not reflected in the act of choice. Selecting the hyperlink can disprove whatever subjective interpretation the reader had for the signifier.

Navigating a literary hypertext work is not like the back and forth of a spoken conversation, though the reader may be deceived into believing this is the case by the mechanics of hyperlinks. Every choice has an associated, concrete consequence that the reader cannot alter. Professor Bronwen Thomas (2007, pp.358) rightly calls the notion of interactivity as a conversation "both hollow and naively literal", but there *is* a form of spoken discourse that literary hypertext fiction can replicate: the didactic lecture. Having noted that linear written works permit "personal reflection and considered thought", Landow (2006, p.29) argues that stand-alone, read-only hypertext offers "the immediacy of the spoken voice, and the clues that we receive while observing the person to whom we are speaking". This immediacy, this clue hunting as a search for meaning is didactic, not dialectic; it permits questions only in order to verify the reader's understanding.

This dynamic is not resolved by the implementation of alternative navigational methods. Even where search tools are made available as a means of bypassing these linking structures, as some critics (Landow, 2006; Miall, 2001) have suggested, the reader is engaged in a scavenger hunt for meaning. The search terms derive from their understanding of the work, the results a confirmation or denial of their interpretation. Even if we hit upon the "right" search terms, we still find ourselves marooned in a location we cannot understand. "Search" writes Bernstein (2009, p.10) "flattens structure and disrupts context. Links express structure and create context". Deposited into some distant lexia, we begin the process of hypotextual acquisition anew. George Landow (2006, p.150) suggests that the confusion experienced by readers not derived from the complexity of the material is the result of "poorly designed systems", an echo once again of the hypotext as a system i.e. manifestation of authorial presence.

In summary: the quest paradigm, choice as a theological proposition, and confusion as a virtue produce a literary hypertext fiction that disadvantages the reader. These are not necessarily essential properties of branching narratives, but a selective identification of preferred affordances. The rejection of blatant links and an emphasis on stand-alone, read-only

hypertext fiction coerces readers. Speaking of literature in general, Gunther Kress (1989, p.36) suggested that the text attempts to coerce the reader "to become its ideal reader, to step into the reading position constructed for the reader in the text," a position echoed by other theorists (Eco, 1984, p.7; Martin & White, 2005). The reading position that conventional literary hypertext fiction seems to demand is one that takes responsibility for choices over which they have no meaningful control, since they have agency but no legitimate capacity to make judgements. It demands confusion and rereading, offering a quest for meaning in return. To evaluate this conclusion in more detail, we can look in more detail at how literary hypertext fiction's coercive frameworks impinge upon an actor's liberty to choose.

What limits exist to restrict our freedom of choice or action? Richard Holton takes as given that choice requires the absence of impediment, but it is worth focussing on what form such impediments may take. Such qualia of freedom are best understood by returning to our earlier discussions of freedom and liberty, which outlined Mortimer Adler's principle of circumstantial freedom with reference to Isaiah Berlin and Charles Taylor (see Section 1.3.2). Does somebody offered an *opportunity* to choose bear responsibility if they cannot (for whatever reason) *use* that opportunity? Like Berlin, Taylor, and Adler, Holton says no. In order for a choice to be legitimate, the actor must firstly be free to act; secondly, there must exist no conditions which are "incommensurate with choice" (2006, p.7-8). e.g. being able to choose in principle but not in practice, and having no idea how to rank these choices

Keeping this in mind, we can turn to Terence Harpold's analysis of *afternoon*, in which he discusses a lexia entitled simply *Do you want to hear about it?* Whether the reader answers in the affirmative or not, Harpold (1994, p.195) considers us to be "recognizing the [author's] authority" by choosing to respond at all. Despite this, Harpold believes neither choice "frees us from the burden of deciding what to do next", or any consequences that follow – see also Kress *et al* in the previous section, or Landow's assertion (2006, p.288) that all readers take "political responsibility" for their choices. Despite submission to the author's authority, we are supposed to take on responsibility for the consequences of our actions, since we are "choosing" to continue (the *Stop Hitting Yourself* argument). In doing so we may be forced to act against our

will, an akratic process which does not arise when there is no pretence of agency, as in the case of the linear novel.[25]

Reading literary hypertext fiction, argues Astrid Ensslin, requires "a continual decision-making process", which becomes "increasingly random if the chosen path does not exhibit any logically structured sequence of events or if it does not provide answers to hypothetical questions that motivate the reader's choice" (2007, p.127). Can the reader really be considered responsible for choices made under such duress? Admitting the ease of constraining user choice, Marie Laure Ryan (2006, p.91) is typical in arguing that interactive narrative "demands a choice sufficiently broad to give the user a sense of freedom" and a narrative that at least appears to adapt to this pattern. An "excess of possible trajectories", says Harpold (1994, p.193) in a similar vein, easily leads to "misadventure" on the part of the reader. Discussing the structure of hypertext narratives, Murray (1997, p.134) suggests they are commonly either *overdetermined* (the objective is too clear) or *underdetermined* (the objective is too abstract). Both approaches, however, concur that there is a quest to be solved, the question being how clear the author has made their objective. Murray's solution is a narrative "goal-driven enough to guide navigation" and "open-ended enough to allow free exploration" in pursuit of that goal.

For Laure Ryan, Harpold, and Murray, skilled authorship consists in guiding the reader without feeling constrained, directing the reader to believe they act of their own free will, when in fact they are maintaining a trajectory desirable to the narrative designer. This is coercion by any other name, persuading the reader to feel they are acting of their own volition when in fact the narrative is structured to deny this liberty to the reader. Philosopher and classical liberal Friedrich von Hayek defines coercion as "the control of the essential data of an individual's action by another" (1960, p.139), and that even a figure so diametrically opposed to the politics of continental theorists would see this as an intrusive exercise in positive liberty should underscore the dissonance of such a claim.

Section 5.1.1 saw Mireille Rosello (1994, p.134-5) describe hypertext as a motorway into the wilderness, paralleling Deleuze and Guattari (1998, p.18) and their own discussion of the rules of the road. Motorways, they argued, do not enclose people; the rules of the road allow drivers to "drive infinitely and 'freely' without being at all confined yet while still being perfectly

[25] Moral responsibility extends to similar choices made in video games, though here the hypocrisy is more often recognised. For example, Germany's entertainment regulatory body (USK) looks more favourably on works that permit non-violent solutions to gameplay situations (2013, p.12), despite players still having the choice to take the lethal option. The choice shifts moral responsibility from developer to player.

controlled". Similarly, the stand-alone, read-only hypertext fiction reader may explore "freely" whilst still be perfectly controlled by the author. By keeping important information from the reader, through opaque hyperlinks for example, the reader is coerced into pursuing what appears to them a more or less arbitrary path. It is only by uncovering the writer's overarching structure that the reader can begin to make sense of it, their choices becoming meaningful as their acceptance of authorial meaning increases. This places power in the hands of the writer; since the reader is again seeking the writer's intention.

Like a stage magician forcing a card, the hypertext author 'forces' lexia on the reader, whilst maintaining the illusion of free choice. Scholars of literary hypertext fiction have tended to focus on the *opportunity* of choice, an essentialist view of freedom that ignores the coercive impact these systems possess. Positive liberty asks "what, or who, is the source of control or interference that can determine someone to do, or be, this rather than that?" From this we must conclude that mark-up is a tool that permits the author to intrude upon the liberty of the reader.

So far we have been looking at what defines a choice; what is the consequence of its absence? Having outlined the material constraints on a reader's liberty, the following section will attempt to look at the conseqence of these inauthentic choices on readers.

5.3.1 Consequences of Inauthentic Choice

How authentic are the choices found in hypertext fiction? Taking Charles Taylor's three conditions which may impinge upon freedom to choose (see Sections 1.3.2), we may take each in turn and consider them in the context of literary hypertext fiction.

Firstly, the bewildering nature of branching narratives is commonly assumed to evoke anxiety in the reader (Bernstein, 2000; Landow, 1997, p.117; Yellowlees Douglas, 1991) as they search for answers. This excess of *inner fear* encourages readers to seek verification from the text (as discussed in the previous section) since it is the work alone that can offer verifiable solutions to questions.

Secondly, hypertext fiction defies certainty through both indeterminacy and the common adoption of "links that lie" (Bernstein, 2000). This uncertainty results in *inauthentically absorbed standards,* since the reader cannot rely upon the structure of the work. Laure Ryan (2006, p.91) describes the ideal reader of hypertext fiction as possessing "the feeling of acting of their own free will, rather than being the puppets of the designer" but is quite clear that this feeling is not authentic. The scope of the work (and the relationship between its ideas) are both kept from the reader, and in some cases literary hypertext fiction works are actively structured to gate or

redirect certain links until a reader has reached some designated point in the overarching narrative. At best this could result in an individual understanding of the work, that unique interpretation ostensibly prized by so many theorists. Except, of course, that hypertext fiction constitutes a set of "linked presences" (Kolb, 1994, p.335) that offer potential verification or active discrediting of an interpretation. This results in both inauthentically internalized standards (since the parameters for the choice are both fixed and unfixed) and *false consciousness* (since the reader is both certain and uncertain). This quantum state of knowledge defies the reader's attempts to achieve fulfilment. The conditions under which such readers make choices cannot be considered authentic.

Some critics (Aarseth, 1997, p.134; Moulthrop, 1991, p.697; Murray, 1997, p.152-3; Ryan, 2006, p.99) believe that readers derive their power from partial submission to the author, thus being permitted to play a limited creative role in a restrictive authored environment. Murray describes the role of the literary hypertext fiction author as that of choreographer, supplying "the rhythms, the context, and the set of steps that will be performed" (1997, p.153). This description seems in step with Ted Nelson's description of hypermedia (1970, p.16) as "branching or performing presentations which respond to user actions … designed, written, drawn and edited, by authors, artists, designers and editors".

This idea of reader as performer, an active participant without the distracting qualities of authorship, is a seductive one, since it confers the whiff of poststructuralist legitimacy without the niggling contradictions. "In electronic writing space", says Bolter (1991, p.158), "all texts are like dramas or musical scores. The reader performs the text". This approach recalls semiotician Umberto Eco and his principle of the open and closed text, which may offer a framework for this understanding of the relationship between author and reader (see Section 2.1.1). Eco illustrates the open text with a number of examples, including Stockhausen's *Klavierstiick XI*, in which performers are given a sheet of music with a series of music groupings, which they assemble into a piece. Some critics (Joyce, 2001, p.27) have inferred that hypertext offers a similarly "infinitely extensible" work (Ensslin, 2007, p.37), meaning that – much like Murray's choreography – the reader explores indefinitely within narrow parameters. This would seem the ideal metaphor for understanding the affordances of stand-alone, read-only hypertext, one not reliant on networked, user-editable hypertext's wider capabilities that may yet offer some liberation for the reader.

Klavierstiick XI, however, is just one of many works cited by Eco, which includes such linear print fictions as Kafka's *The Castle* and the writings of James Joyce. Open works are those that defy the search for answers, whose contents are allusive and elusive in turn. Moreover, Eco does not consider open works like *Klavierstiick XI* to offer "infinite possibilities" – instead, such works offer "a range of rigidly pre-established and ordained interpretative solutions, and these never allow the reader to move outside the strict control of the author" (1979, p.6). Merely rearranging elements should not be misinterpreted as authorship, in other words. Stuart Moulthrop (1995, p.123-125) argues that Borges' *The Garden of Forking Paths* was restricted by the "immutability" of the printed page into a single set of discursive practices. "Readers are asked to imagine a world of multiplicity from within an overwhelmingly linear and exclusive medium". This maligned world of multiplicity is the imaginative, interpretative space that belongs to the reader of linear print fiction, and to suggest that the author ever defined these horizons is to distort our understanding of the reading act; a misinterpretation *of* interpretation, as it were. Only Yellowlees Douglas notes Eco's resistance to the antiauthorist argument, seeking to resolve the issue by referencing networked, user-editable hypertext, and suggesting that stand-alone, read-only hypertext is a staging post in that process (1997, p.141). Eco, it should be noted, is listed in the acknowledgements of Landow's book *Hypertext*, but appears only in a section in which Landow criticises Aarseth for making similar use of Eco's work to criticise literary hypertext fiction.

Downgrading the reader from equity with the author to a mere performer does not resolve the ambiguities presented by literary hypertext fiction. Having stepped back from the more strident claims to liberation, however, perhaps we can find a concessionary and empowering role for the reader in one of literature's oldest: that of editor. This approach has historical precedent (a team at University of Illinois were discussing literary hypertext reading in the lesser terms of editorship as far back as 1982) and the editorial metaphor provides a convenient way for some critics to fuzz the role of the reader in literary hypertext fiction, implying agency whilst covertly abrogating their more uncompromising vision of reader-as-writer. Rosenberg (1996), for example, suggests "reader-as-gatherer", a description intended to carry the same connotations as Landow's reader-author, but to better reflect the actual activities of hypertext's readers. To gather is, of course, to assemble a meaning from the available information, which is again to privilege the author's meaning, and the editorial metaphor is not one that offers much for the reader. Kendall and Rety (2000, p.161), for example, echo the editorial metaphor, arguing that

the reader's role resembles that of "an author organizing a final version from preexisting rough drafts and notes". In the same section, however, they note that an author creating the final version of a text "depends upon an overall knowledge of the material to make sound structural decisions". In order to be an effective editor, then, the reader must understand the whole work – the *exhaustive* approach, once again. Rather than question how this undermines the author, Kendall and Rety set out to ask "how can we compensate for the reader's limited knowledge of the materials when she constructs her own text out of fragments?" (p.162) Their solution? To have the author intrude further on the process, in one of three ways: make the connections between lexia more explicit, highlighting areas the reader does not yet understand; have the hypertext system "adapt the emerging text structure" to guide the reader towards closure; let the author "encapsulate elements of the creative (decision-making) process" into the system, a modernist, self-conscious approach to the role of the reader. "The reader" they conclude "can then tap into a surrogate for the author's knowledge when manipulating these structural components."

Kendall and Rety seek to equate this author surrogacy approach with poet Samuel Taylor Coleridge's *organic form*, in which "structure emerges from content" (p.162) rather than being imposed mechanically (through rigid patterns of stanza, for example). "In writing a hypertext," say Kendall and Rety, an author faces the challenge of "creating opportunities for structural growth that are as artistically sound as a finished structure". In describing the difference between mechanical and organic development, however, Coleridge argued that the latter evolves systemically:

> The form is mechanic when on any given material we impress a predetermined form, not necessarily arising out of the properties of the material-as when to a mass of wet clay we give whatever shape we wish it to retain when hardened. The organic form, on the other hand, is innate; it shapes as it develops itself from within. (1960, p.198)

Constructing a system that prods the reader towards a certain construction – which invisibly guides them to a certain conclusion – seems more insidious than simply presenting the information for analysis and discussion.

Whether in an editorial or purely writerly sense, these literary hypertext fiction critics still discussed the work of the reader as creative, more liberated than the role of the linear fiction reader, and each was concerned primarily with how that liberation operates in practice. Marie-Laure Ryan offers a particularly scathing rebuttal to this approach:

> If working one's way through the maze of an interactive text is suddenly called writing, we will need a new word for retrieving words from one's mind to encode meanings, and the difference with reading will remain. (Ryan, 2003, p.9).

Earlier I outlined Ryan's own six genre of hyperlink, and suggested that only the much-criticised blatant hyperlink represented something unique to conventional hypertext fiction (see Section 5.1.1.2). In a related sense, it might be the "prosaic" *Choose Your Own Adventure* novel that offers the best possible model for stand-alone, read-only hypertext fiction, at least within Holton's framework. Blatant links permit the reader the closest thing to a clearly defined interpretative space, since it is honest – indeed, self-conscious – about its artifice.

This genre of hypertext fiction also has a legitimate claim to historical "firstness", in Alan Lance Andersen's rarely discussed *Elfland Catacombs* (1981). This and similar works offer hyperlinks that promise predictable outcomes, the antithesis of literary hypertext fiction's presumed requirement of confusion. In the same year *Elfland Chronicles* was published, Nelson (1981 [1993], p.15) outlined his preferred general model for hypertext, offering "different pathways for different readers, based upon background, taste and probably understanding". This approach, he argued, would give readers "many choices in approaching the same work", recognising that such choices would need to be explicit. If we deconstruct literary hypertext fiction itself - rather than using the affordances of literary hypertext fiction to deconstruct linear print literature, as others have done - we see that the desire to legitimise a particular poststructuralist approach resulted in a hypertext fiction ironically tailored to disadvantage the reader.

Confusion arises from an abundance of choices. Offered multiple directions of travel the reader is paralysed by indecision; they are uncertain about the path they are "supposed" to follow, but aware of the destination they seek. Reading becomes a defacto quest for meaning, as it arguably always has been, but a quest whose author is dishonest about their goal.

5.4 Conclusion

This chapter sought to demonstrate that the formal characteristics of conventional literary hypertext fiction arguably privilege the author as much as it disadvantages them.

The first section summarised information asymmetry and the principle argument of conventional hypertext fiction theory: that by substituting a branching network for the linearity found in the printed novel, the reader is able to evade the author's control, but only at the cost of

a more confusing narrative. This argument was challenged in the second section, which argued that the presence of unread lexia (and an opaque hyperlinking structure) permitted the author to intrude into the interpretative space of the reader. This approach results in reading being framed as a quest for meaning, a purpose at odds with the work of Foucault and Barthes – the very arguments that the medium was said to demonstrate. Slatin (1995, p.159) offers three types of hypertext reader: browser, user, or co-author. Browsers wander "rather aimlessly (but not carelessly)", not motivated by completion; users enter the hyperdocument "in search, usually, of specific information", while co-authors "become actively involved in the creation of an evolving hyperdocument". Only the former two can be found in conventional hypertext fiction, and both are at odds with the project of Barthes *et al.* A continuing exploration of this question took us through indeterminacy and the encouragement of readers to return to the work for validation.

This discussion of the limitations of conventional literary hypertext fiction's indeterminacy resulted in the extended final section, which sought to distinguish the forms of choice found in such hypertext fiction works, and to illustrate that it was the theological choice – an appeal to a omnipresent superior for validation of your decisions– that best reflected the form of choice found in conventional hypertext fiction, once again undermining its utility as a tool for Barthesian liberation of the reader. Espen Aarseth, in my opinion never fully convinced by the anti-authorist argument, recommended that literary critics of hypertext fiction should not confuse interpretation with the "author-reader relationship" made possible by the ideology of hypertext systems in general, since the conclusions are inappropriate for *all* hypertext systems (Aarseth, 1994, p.67). Many critics, however, did just that. The novelty of hypertext systems meant that the stand-alone, read-only model became associated with both networked, user-editable systems (as each was understood at the time), and its undeniable redefining of textuality in favour of a more democractic approach to authorship. This in turn meant that conventional hypertext's potential to undermine the reader's interpretation remained incompletely explored, relying on affinity with networked, user-editabe hypertext.

Hypertext as a medium ideally operates by inclusivity, literary fiction by exclusion and distance; where hypertext theory favours the construction of meaning, literary fiction seeks deconstruction of all certainties about textuality. The virtue of the linear literary work is precisely in its boundaries, its finite nature and refusal to offer all its answers. Its indeterminacy necessitates that the reader fill in the empty spaces, encouraging a view of the work as limited in scope and knowingly incomplete. The work is merely the central hub in a tissue of citations,

which hypertext's bewildering structure undermines. Citing both computer scientists like Engelbart and Nelson, and literary theorists like Barthes and Foucault, Landow argues that "technology always empowers someone":

> It empowers those who possess it, those who make use of it, and those who have access to it. From the very beginnings of hypertext (which I locate in Vannevar Bush's proposals for the memex), its advocates have stressed that it grants new power to people. Writers on hypertext almost always continue to associate it with individual freedom and empowerment. (Landow, 2006, p.335)

Stand-alone, read-only hypertext is a medium that empowers the author, not the reader. Networked, user-editable hypertext systems might have "the potential to liberate readers from the linear domination of physically stable media" (Liestøl, 1994, p.104) – but in stand-alone, read-only hypertext, we find only a new kind of authorial domination.

Significant scholars of literary hypertext fiction argued that graphics were the future of hypertext (Barrett, 2000, p.7; Bolter, 2001), implying that it was the interface (and not theoretical approaches to hypertext fiction) that had failed. In a book published in 2015, scholar of mass media Hartmut Koenitz makes the familiar argument that interactive digital narrative "promises to dissolve the division between active creator and passive audience and herald the advent of a new triadic relationship between creator, dynamic narrative artifact and audience-turned-participant" (2015, p.18), just as hypertext theorist David Miall had argued that hypertext fiction cannot have authors "in the old-fashioned sense" (1998) a decade and a half earlier.

"Since the turn of the millennium," writes Professor of Digital Culture Scott Rettburg (2015, p.212), "writers working with digital narrative have been decreasingly interested in the poetics of the hypertext link and network story structures and more interested in evolving network styles of writing". The same anti-authorist arguments, this time scaled up to all interactive digital narratives. Considering the response of humanists to reading early electronic text, Landow (1994, p.6) argued that their response had more to do with "current computer technology" than the work itself. *Are* the concerns expressed in this chapter transcended by new technologies, or does the stand-alone, read-only hypertext fiction paradigm's problematic relationship with liberty simply find itself remediated in the brave, new(er) world of contemporary interactive digital narrative?

Chapter 6 The Convergence Argument Today

Chapter 5 argued that opaque hyperlinks, a newly privileged quest for authorial meaning, and the eternal tease of its unique indeterminacy undermines first-wave hypertext fiction theorists' claims of anti-authorism, problematizing hypertext's ability to offer meaningful choice. The failings of hypertext fiction have often been attributed to their graphical or technological capabilities (Barrett, 2000, p.7; Bolter, 2001), so it seems worthwhile to consider how this anti-authorist paradigm functions in more recent works. To that end, this chapter focuses on a series of case studies, each identifying continuities with the concerns expressed in the previous chapter, before closing with a discussion of how these concerns might partially be resolved.

The first section looks at *Twine,* a platform that has rekindled interest in hypertext fiction outside the academic community. Consciously or otherwise, *Twine* authors have returned to the same author-privileging paradigm identifiable from earlier literary hypertext fiction works. The second section looks at Mateas and Stern's *Façade,* an intermediary 2005 work that seeks to resolve issues from literary hypertext fiction by offering readers the chance to author their own questions, in doing so remediating (but not resolving) the problems identified in Chapter 5. The third section looks at *Her Story*, whose integration of search parameters into mystery fiction perpetuates authorial privilege. The final section considers a specific way in which simulation can offer a conventional branching narrative that achieves the ambition of being anti-authorist, which echoes ideas from the previous chapter.

Before all this, however, it behoves us to consider some responses to this paradigm derived from the hypertext fiction community itself. The peculiar mode of link/node hypertext favoured in the 1990s for its perceived relationship with continental literary theory has been extensively critiqued, and subsequent waves of criticism (Ensslin, 2007; Bell, 2010) were been accompanied by numerous experiments with the hypertext paradigm that have sought to explore the medium in different ways. It is worthwhile, therefore, to discuss how these alternative systems resolve or explore the concerns expressed in the preceding chapters.

6.1 The Praxis of the Second Wave: After *Hypertext*

Concurrent with their 2012 exploration of reading hypertext fiction, researchers Alex Mitchell and Kevin McGee developed a procedural hypertext fiction authoring tool they called *HypeDyn.* An example of adaptive hypertext fiction, in which "links and nodes may be varied procedurally as the result of past read actions", Mitchell and Mcgee's system allowed authors to "set

conditions on links, determining whether or not a link can be followed" (Mitchell and Mcgee 2012a, p.19). As the authors themselves note, this technology echoes StorySpace's own "guard fields", the presence of which had been the source of significant debate between Aarseth and Landow. Mitchell and Mcgee's system, however, permitted the *content* of the node to be altered according to reader choices, as well as forcing certain content to appear whenever certain conditions (or "facts") are fulfilled. This introduces the potential for control at the *fabula* level, since certain nodes may become inaccessible as a result of previous reader decisions.

Adaptive hypertext in its many forms represents an evolution of pre-existing authorship ideas, but this exciting tool still exhibits potentially problematic author-privileging traits. Hyperlinks that are not yet available, for example, *HypeDyn* marks in bold. This paratextual tease recalls Section 5.1.1.3 and the Quest paradigm: readers know there is content to be obtained, but don't know how to retrieve it. This makes content a prize, with hyperlinks the gatekeepers. This notion of guarded or "locked" lexia recalls Kendall & Rety's 2000 *Connection Muse* system. *Connection Muse* proposed a system of conditional links, in which nodes could be locked out until certain narrative points were reached, something *HypeDyn* implements through *Anywhere* rules, where certain hyperlinks appear anywhere within the work once certain criteria are fulfilled. Again, this feature was already an established part of works like *Victory Garden* and *afternoon,* albeit in a binary (accessible/inaccessible) form, though it is perhaps best explored through the underrepresented approach of 'sculptural hypertext'.

Originally coined by Mark Bernstein (2001) and elaborated upon in collaboration with David Millard and Mark Weal (2002), 'sculptural hypertext' represents as much a philosophical view of hypertext as a practical approach. Conventional hypertext asks the author to take a set of unconnected nodes and link them together; sculptural hypertext, by contrast, takes nodes that are all equally connected at the start, then has the writer establish conditions that restrict their connection to one another. Bernstein offers *Card Shark* as an example of this approach, in which a reader is dealt seven 'cards' from a virtual 'deck' of nodes. There are at once two restrictions on the reader's experience: the deck is randomised, and the hand size limited to seven. Assuming that a functional random number generator is in place, the author has relatively little control over this part of the process. Whether or not the player can *read* their cards, however, is another matter – rules built into the system prevent the reader from accessing certain 'cards' in their hand unless preconditions are met: a card may REQUIRE ANNE, meaning it cannot be read unless another node has signalled that the character 'Anne'

has now been adequately 'met'. The reader may literally hold the cards but the author defines whether or not they can be read.

Sculptural hypertext offers a unique way to visualise the work of writing hypertext. Intentionally or otherwise, creating connections is reframed as destructive rather than constructive, since connections become a means of locking readers out of material they are insufficiently prepared for. *Card Shark,* writes Bernstein, "foregrounds sequence and emphasizes structure" (2001), precisely those elements against which earlier theorists of hypertext fiction were struggling. Bernstein notes the likely possibility that, as a result of the choices players have made, there may simply be no more cards to play. Perhaps it is the card metaphor, but this cannot help but recall playing the game *Solitaire*, in which the luck of the draw may result in an unexpected loss against which the player had no reasonable defence. Unless the reasons for this gating are explained, there is little the reader can do to overcome it. The draw is random, as is the reading, so the imposition of these gates is there to ensure a more satisfying narrative experience.[26] In reading, these gates become a reassurance that while the story may appear chaotic, there is a logic and reason guiding its structure. In the abstract for the 2002 ACM hypertext conference *calligraphic hypertext*, defined as "the more familiar method of finely authoring each link", is contrasted *with sculptural hypertext*, in which "the document author starts with a massively connected structure, and the task of authoring links consists of cutting away those links that are not wanted". This meaningful and entirely legitimate distinction should not detract from its restatement of authorial propriety (since the author still determines essential constraints by which the work can order itself).

The description of *StorySpace 3* lists its implementation of sculptural hypertext as a key feature: "writers can remove links and enforce constraints so the hypertext organizes itself. Sculptural hypertext encourages painterly narrative in which the writer controls what she knows to be necessary while relaxing control over the reader when control might not be needed" (StorySpace 3, 2018). The idea of the hypertext organising itself chooses to ignore the author's influence in determining how and when this narrative will unfold, and the same intrusive movement into the reader's interpretative territory is found in the contingent virtualisation implicit

[26] That a satisfying narrative experience could be considered a weakness indicates the strange consequences of a focus on reader confusion in literary hypertext fiction's early development.

in the idea of necessary control and control being relaxed when the author – not the reader – feels it is necessary.

Informing the reader as to what restrictions prevent a card from being turned can also mitigate this randomness. Bernstein's system does not permit this, however, a restriction retained in the current version of *StorySpace*, while the *ChoiceScript* platform informs the reader only which requirements are currently unfulfilled. These proairetic passgates become no more or less surmountable, but at least the reader now knows what questions they do not yet have answers for. More recently academics have described an approach to the patterning of hypertext they called *Unlocking,* clustering groups of lexia into *phases*, ensuring that "a certain number of nodes are read in each phase before the transition node becomes available" (Millard & Hargood, 2016). By shaping the script the user is discouraged from reaching the conclusion of the quest too early, much as Joyce used *guard fields* to "control a reader's experience of the text" (Barnet, 2013, p.232), whether by requiring the reader to locate a particular node or geographic location (Hargood *et al.* 2018).

Another approach is to move away from the link-node paradigm entirely, attempting something more experimental that plays with the hypertext form. Such a project was the 2012 *Fractal Narratives* project, which presented a different kind of navigation. Based on the principle that "any two consecutive text nodes in a story can be extended by adding a third optional text node between them", *Fractal Narratives* initially present a closed concertina of available hyperlinks, with only a few lines of text visible (Hargood *et al.,* 2012). Between each line, however, is an alluring *Click here to read more*, which will reveal further lines which make up the narrative. In this way the level of detail is determined by the reader, who may continue to unfold events as they choose. While not discussed in these terms, this project recalls *StretchText*, a form of hypertext not commonly implemented (see p.171). As noted above, however, the effect is to perpetuate the pullulating moment, the promise of more context and information; in practice readers would open all links and read them consecutively, much as they would any other linear short story.

If nothing else, the preceding pages should indicate the vibrant and exciting research into alternative hypertext systems still taking place around the world. Nonetheless, conventional calligraphic or link-node hypertextual approaches remain a potent force, one that can be found in a variety of places. The bulk of this chapter is now given over to exploring these continuities.

6.2 Case Studies

Before moving on to wider case studies exploring ideas presented in the previous chapter, it is worth noting this is by definition a selective study, which does not treat videogames as a single entity. Writing in 2006, Marie Laure Ryan felt confident in dismissing video games entirely from her study of interactive narrative, arguing that she would focus on "those works composed by individuals or small groups" (p.127); an *auteurist* fudge for rejecting an unwieldy canon. In the same year, Janet Murray (2006, xii) argued that we should locate the videogame equivalent of the "small press", whose scale allows for the narrative experimentation that the bestseller could not permit. Significant critical energy (Aarseth, 2004; Clearwater, 2011; Lessard, 2014) has subsequently gone into defining the genres of video game, but the focus is predominantly on establishing and advancing a new taxonomy. Such categorisation is a worthwhile endeavour: The Fullbright Company's *Gone Home* is a transparently different narrative experience to Activision's *Call of Duty* or Apogee Software's *Rise of the Triad*. Determining which route to take to defeat El Oscuro (in the latter case) includes non-diegetic selections of weapons or paths around the environment, but does not exhibit the continuity with hypertext narrative that *Gone Home* and others exemplify.

To which genre do my chosen works belong, then? Genre, says John Swales (1990, p.49), is about family resemblance rather than clear, permanent boundaries, and the works or platforms identified here are those that exhibit entwined material and philosophical continuities with conventional hypertext fiction as outlined in previous chapters. This final chapter looks at how the anti-authorial paradigm has manifested in such recent works, establishing that the issues identified over the preceding chapters are not located solely in the historically interesting question of hypertext fiction. This process of untangling begins, appropriately enough, with *Twine.*

6.2.1 Twine

Originally designed by programmer Chris Klimas, and released under the GNU Open Source License in 2009, *Twine* allows for the creation of branching narratives in a manner very reminiscent of Eastgate Systems' *Storyspace*. The intuitive, open-source environment has resulted in a modest resurgence of interest in writing hypertext fiction, of a type that Michael Joyce would easily recognise. *Twine* adopts what Jane Friedhoff (2014, p.3) calls the "corkboard paradigm", in which the author creates lexia as individual cards on an electronic

corkboard, which are then connected via visible lines. This can then be exported as an HTML file, which is navigated much as *Victory Garden* or *afternoon* were, with those connecting lines being rendered as hyperlinks:

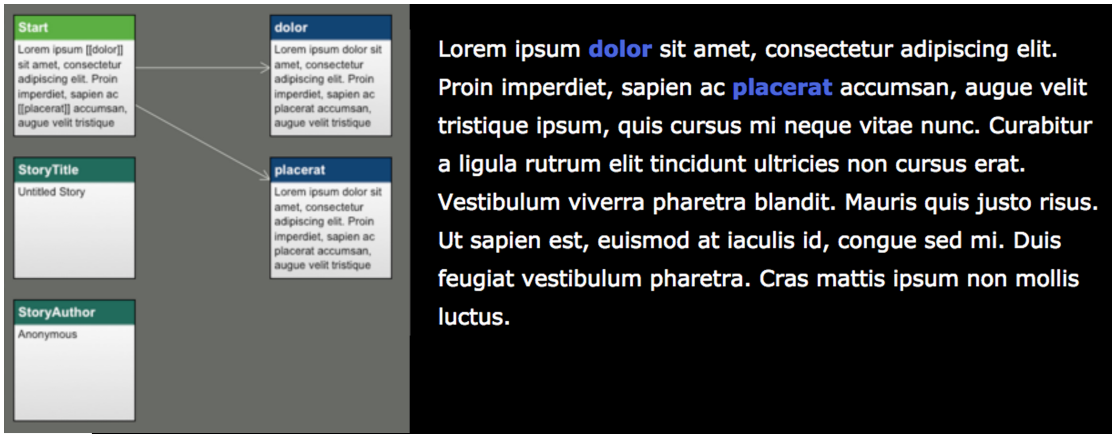

Figure 8: Twine author & reader's view (left/right)

It is also possible to generate such a page with your own program, if you have extensive interlinked text you want to visualize hypertextually.

While there are a number of minor improvements on *Storyspace* and its ilk (including potential for deployment across multiple platforms and highly customizable output) the core experience remains remarkably similar to first-generation hypertext fiction. This permits us to consider the emerging canon of *Twine* works, and what manner of textuality this system seems to generate.

Despite popular use of *Choose Your Own Adventure* novels to explain Twine's appeal (Anthropy, 2012b; Bernardi, 2013; Freeman, 2015), much of the excitement and interest in *Twine* has instead focused on its potential for allowing historically marginalised voices to be expressed. Perhaps one of the better-known *Twine* works is Zoe Quinn, Patrick Lindsey and Isaac Schankler's 2013 *Depression Quest.* An "interactive (non)fiction about living with depression," its objectives are outlined on the first screen:

> The goal of this game is twofold: firstly, we want to illustrate as clearly as possible what depression is like, so that it may be better understood by people without depression. … Secondly, our hope is that in presenting as real a simulation of depression as possible, other sufferers will come to know that they aren't alone, and hopefully derive some measure of comfort from that. (Quinn *et al.*, 2013)

This is a clear statement of intent: the user is expected to derive meaning from the work, to follow the trajectory of the designer, either for didactic or self-identification purposes. Alexander Nehamas (1986) argued that studying texts "to determine this (ideally) consistent and profound

intention and thus to recapture the state of mind that led to their production" is the exact reverse of Barthes and Foucault's goal (see Section 3.1), whatever other virtues the work possesses.

This comment is not to criticise the significant number of *Twine* works that aim to place the reader in the mind of a marginalized or unheard group. Some of the best conventional hypertext fiction has focused on historically marginalized voices – Caroline Guyer's *Quibbling*, for example, or Shelley Jackson's *Patchwork Girl*. Instead, it seeks to highlight that such an endeavor is fundamentally at odds with the anti-authorist project, which is intended to *distance* author from reader. Mirielle Rosello (1994, p.127) suggested that hypertext in general might both foreground and redefine issues of race, culture, and sexuality, and as it has moved from cutting-edge technology to something more widespread and democratic, this seems to be the case.

Conventional hypertext's utility as a delivery system for authorial intent (see Chapter 5) is echoed by Twine's design. "A platform without Twine's specific affordances", writes researcher Jane Friedhoff (2014, p.2), "likely would not have been able to support the creation and distribution of works by marginalized people". These affordances are those identified as quintessential to conventional hypertext, and a particular consequence of this is to return the author to prominence. Game designer and author Anna Anthropy, a particularly prolific creator and theorist of *Twine* games, sees such platforms allowing "transmissions of ideas and culture from person to person" (2012, p.9) and lauds them for allowing works to be created by a "knowable author" whose identity and history can be clearly identified through the work (p.78). Twine is well equipped to author "vignettes", to borrow Ian Bogost's term, these being any interactive works that "do not make an argument, but characterises an experience" (2011, p.23). This focus on experience has much in common with Bernstein's observation that hypertext fiction "seldom invites or permits the reader to select actions for the hero protagonist" (2009b) but asks us to navigate on the basis of other motives.

The short, technically (not intellectually) trivial nature of these works lend themselves both to a relatively straight-forward branching structure, and the evocation of a specific mood or emotion. Using the title "personal games" to describe the burgeoning *Twine* scene, Alison Harvey argues that the word *personal* here "refers to both their stories and often individual production" (2014, p.98). The introduction to *Twine's* manual echoes the standard line on hypertext fiction, familiar to readers of Chapter 2:

> The difference between hypertext and a linear story, the kind found in books and magazines, is that it allows the reader to have some measure of agency. In other words, the reader has some ability over what he or she reads next… Because hypertext branches so much, it's easy to get lost in your own work. Much of Twine is dedicated to helping you keep track of your work's structure visually with a story map, so you can see what your readers' experience will be like. (twine.org, 2015)

Twine is there to keep the author from being lost – not the reader, who continues to fend for themselves. Concealing the hypotext, a conventional link-node calligraphic paradigm that *Twine* perpetuates, is by no means a requirement. Frank Halasz *et al.* made the corkboard paradigm the default view in their 1987 system *NoteCards,* which became a significant influence on the spatial view found in Catherine C Marshall *et al.'s* 1991 platform *Aquanet,* which rejected the traditional "focus on nodes and the local connections between them" in favour of visually representing all nodes. The continued concealment of the hypotext through two discrete views – one for the author, one for the reader – is a demonstration of the continued focus on concealment and obfuscation which hypertext seems to engender. Later, in a section explaining what hypertext in general can be, *Twine*'s manual promises "there are as many kinds of ways a text can branch as there are writers" (twine.org, 2015), which Friedhoff rightly points out as being more welcoming to writers than more technically sophisticated platforms (2014, p.3) that demand far greater knowledge of its structural conventions. *Twine's* manual may have been written for all users, but the emphasis is squarely placed on the narrative intentions of the author, and how they might be realised. Such approaches to hyperlinking encourage readers of works like Travis Megill's *Memorial*, which tells the story of his bereavement, to seek authorial meaning in the narrative.

Twine author and theorist Porpentine Charity Heartscape (hereafter Porpentine) has a similarly ambiguous relationship with hypertext's affordance of choice and branching. Her 2012 work *Howling Dogs* presents a dizzying succession of virtual reality sequences as respite from the protagonist's imprisonment, but only one point at which the narrative branches. Where choice is offered elsewhere, it is often paradoxical or ironic. Another of Porpentine's works, *Everything You Swallow Will One Day Come Up Like a Stone* (released for a single day in 2014) presents a counter that can be increased or decreased by clicking. Some clicks trigger quotes or sentences, while long stretches go by where nothing occurs. Between 300 and 400 links appear which dramatically increase your counter, and the user is presented with a choice: either abandon the intervening numbers, or work their way methodically backwards to be exhaustive. A metaphor for suicide, it also functions as a metaphor for choice in conventional

hypertext fiction: that we must proceed as if we had made a choice, even where no meaningful choice has in fact been made. We may recall the previous chapter's discussion of reading strategy, which suggested anything other than an exhaustive reading continued to privilege the author, since the indeterminacy remains within the work (see Section 5.2.1). This is certainly the case here.

Twine is exemplary in giving a powerful tool to those "non-engineers" (Anthropy, 2012, p.9) who may lack the technical skill or resources to execute their ideas. Many works, however, opt to use the hyperlink as a purely monodirectional navigational tool, much as one might with the buttons of a Kindle. Where works have experimented with branching narratives, the result has been to see the return of the same issues around coercion found in the previous chapters. Anna Anthropy's *queers in love at the end of the world* offers branching narrative in the *Choose Your Own Adventure* style, but with the added twist of a timer which ends the game after ten second:

> In the end, like you always said, it's just the two of you together. You have ten seconds, but there's so much you want to do: <kiss her>, <hold her>, <take her hand>, <tell her>.

Selection of each link takes you to a subsequent page (with additional choices), which follows logically from the preceding page. In a linear work the protagonist may kiss their significant other, allowing the reader to consider what they might do in the same circumstances; here the author once again intrudes upon the interpretative space of the reader. Perhaps the reader intended *tell her* to refer to an infidelity? Perhaps *hold her* anticipated an erotic adventure, or the proffering of emotional support? Selecting *hold her* triggers the following:

> Her smell.
> Her touch.
> How protected you feel.
> How much you want her.
> Her breathing.

Here I am able to discover that, for the narrative at least, there is only one interpretation of *hold her* that the work will accept. Hypermedia offers the potential to synthesise experience, say Paul Delany & George Landow (1997, p.7), ultimately "integrating (or reintegrating) touch, taste and smell." This short passage from Anthropy's work encourages us to align ourselves with the subjectivity of another, to sublimate ourselves into the author's experiential world. In turn we consider how this experience equates to our own since, as Annalisa Valpone (2009) argues, "it is the reader who gives meaning to the author's signs and symbols" by relating it to their own

experience. Describing Shelley Jackson's *Patchwork Girl,* Erica Seidel describes scars as "analogous to hypertextual links". Scars are "intimate, integral, the essence of … identity", which she equates with hyperlinks (Seidel, 1994). For Seidel, the hyperlink represents an insistent connection so vital that the reader cannot be relied upon to identify it themselves.

Twine offers additional optional capabilities, though these seem to extend the coercive power of the author further. Lydia Neon's *Player 2,* for example, requires the user to complete a number of form fields:

> Let's find out who you're playing with.
> This will be a game about a real event in your life.
> It was a time when <someone let me down> and I haven't <dealt with it> yet.
> It happened <yesterday>.
> But it <wasn't> my fault. I <didn't start> it.
> Who was it that did it?
> <Text Field>
> Submit
> Esc

The presence of an Exit button is significant, as it recalls the opportunity for abandonment identified in Chapter 5; it makes explicit our ability to leave the work. This option is provided as a kindness by the author, since the issues dealt with may be troubling or upsetting for the reader, but it is the author who has determined that this is the subject of the work. The user has a choice: either submit to the system or leave, on the author's terms. Selecting each hyperlink toggles through a set of possible options. *someone let me down*, for example, can be substituted for *insulted me* or *hurt me*. Each is coercive, since no opportunity exists for positive or uplifting statements.

The merits of this work as a poetic or therapeutic exercise is not in question, but it certainly remains coercive, forcing the user to identify feelings that fit into a particular category, to achieve a particular effect. In his description of Tennyson's *In Memoriam* as proto-hypertext (see p.86), George Landow echoed Aarseth's language in describing the act of "traversing" nonlinear poetic fragments. Through this procession of proto-lexia, the reader "experiences a somewhat idealized version of Tennyson's moments of grief and recovery" (Landow, 2006, p.74). Again, it should be reiterated that this is not a reflection on the qualities of the poem but on its suitability as a model for anti-authorism, since its aim was to evoke the mental state of the author.

The focus in the preceding chapters has been on conventional hypertext fiction, the form that *Twine* most often exemplifies. It is significant that, left to its own devices, *Twine*'s ecosystem has gravitated not simply towards forms of literature that do not privilege anti-

authorism, but actively encourages the reader to empathise and echo the mental processes of its author.

The next study will consider a work designed explicitly to free the reader from one aspect of branching narrative's coercive influence, and how its failure to fully emancipate the reader from the assumptions of conventional hypertext ultimately undermines its ambitions. How can we grant readers greater power over the authorship of hyperlinks, without simply creating a collaborative workspace? An attempt to achieve this laudable goal can be found in Michael Mateas and Andrew Stern's 2005 work *Façade*.

6.2.2 Façade

Façade takes the form of a simulated evening spent in the company of a feuding couple, with interaction via simple movement controls (for navigating their apartment) and a text box into which users can type statements. Within the limited character recognition parameters of the text box, anything can be entered: users may ask about a prominently displayed vase, where the protagonists get their hair cut, or what they have to drink; equally they may ask who won the FA Cup final in 1966, or what colour pyjamas Tom Hanks wore in the movie *Big*.

Façade is not an entirely new direction for interactive narrative. Poet Robert Pinsky's 1984 work *Mindwheel* is an early example of this kind of interactive fiction, what theorist Nick Montfort (2004) describes as "a program that simulates a world, understands natural language text from an interactor, and provides a textual reply based on events in the world". *Façade* is, however, a work produced after the genesis of hypertext fiction scholarship, and therefore capable of addressing itself in those terms. Writing in the paper that accompanies their project, Mateas and Stern (2003) expressed concern that "players cannot yet speak in natural language to the game" and must instead rely on the choices written into it by the author. The conversation metaphor for hypertext fiction to which they are alluding is a familiar one (Kolb, 1994, p.328; Landow, 2006, p.29; Thomas, 2007, p.358), and one I critiqued in the previous chapter (see Section 5.3). By permitting the reader freedom to type anything, argue Mateas & Stern (2005), they are able to speak directly to the machine, without the intermediary influence of an author. *Façade* is designed to "break away from the constraints of branching narrative" and offer a different way to "break a narrative into small grained-size pieces *[sic]*".

This is the stated ambition of their work, but the reality is rather different. Consider the following, taken from a 2017 playthrough of *Façade*:

Player: I like skyscrapers.
Tripp: That's nice of you to say. I'm sure Tripp is happy to see that.
Player: I like your plant.
Grace: That's so nice of you to say.
Player: You look sick. Are you well?
Tripp: You need to leave. Now.

This exchange results in the player being ejected from the apartment. Absent from the above example are the numerous questions I asked that solicited only an awkward glance or grunt of confusion, programmatic catch-alls to allow for the weaknesses of the Natural Language Processing (NLP) system within the game. These glances and grunts alert the user that their behavior is 'incorrect' within the game world. My greatest success in progressing through the experience (measured both in terms of narrative satisfaction and time spent within that world) was achieved by confining my responses only to those few opportunities where an obvious narrative branch was being offered, and then to carefully word my responses to satisfy the text parser. As a result, I found myself back in the same situation of verification found in Chapter 5, but even *less* free. Asked a direct question, I would seek to frame my response in a way that solicits the best answer I could from Tripp. In this way I found myself hunting for the string of characters that might yield a satisfactory response, where at least a hyperlink removes this busy work.

It is arguable that Mateas and Stern are making the best of a difficult situation, and certainly there is no sinister intent in their coercions. They want the player to enjoy the experience, to feel that they are genuinely engaged in conversation, and the reluctant sighs of the protagonist are just that: reluctant, since the system cannot provide any satisfactory response. Just as Joseph Weizenbaum's early chatbot *Eliza* "relied upon the user's imagination to make the conversational inferences that would lend coherence to the exchange" (Ryan, 2006, p.127), so *Façade* relies upon the player to meet it halfway, treating these awkward pauses as part of the fabric of the drama. It is interesting that, just as Mateas and Stern selected an awkward, passive-aggressive couple to lend credence to their awkward dialogue system, so Weizenbaum made *Eliza* a parody of "the responses of an non-directional psychotherapist in an initial psychiatric interview" (1976, p.188) to explain why the responses were so stilted. Both rely on a situation in which a disoriented subject becomes hyperaware of their own words, and in which awkward silences are not considered immersion-breaking.

An almost identical logic to that found in *Façade* appears in Ocelot Society's 2016 video game *event[0],* in which the player can talk to a computer called Kaizen. Anything can be typed

into the computer terminal, to which Kaizen will attempt to reply. This system is reliant on a system of narrative tags, however, and responses are frequently semi-coherent. Two narrative contrivances cover this: that the AI has experience only of the small space station on which it exists, and that it is fundamentally a machine in the process of coming apart. This encourages the reader to go toward the machine, attempting to frame their questions in a way that it will understand. It seems to me that *Eliza, Façade* and *event [0]* all seek in different ways to legitimize the artificial nature of their conversations, by making the respondents less capable of rational speech, whether that be professional requirement, artificial nature, or a lingering air of discomfort.

I would like to frame the gap between what the user types and what the NLP system thinks they mean by referencing the work of linguist John Langshaw Austin, from whom I took the term *nuclear definitions* in Chapter 1. In a 1962 work which heavily influenced Wolfgang Iser, Austin (1975, p.5-7) argued that speech consisted of three parts: *locution*, or what was said ("Are you going to eat that?"); *illocution*, or what was meant ("I want to eat that. Can I have it?"); *perlocution*, the outcome (the meal is shared). These three components are a necessary part of the speech act, and while the outcome may be against the speaker's wishes (you may refuse to share your meal) it is within the framework of appropriate responses. Where Wolfgang Iser attempted to map this structure to the written word, a handful of games theorists have subsequently attempted to do the same for video games (Cardona-Rivera & Young, 2014; Rao, 2011), arguing that the user deploys a particular action (locution) in order to achieve a goal (illocution) and achieve an outcome (perlocution). Understanding this, I will now look to the first exchange in my example above, and map it to this structure:

Player: I like skyscrapers.
Tripp: That's nice of you to say. I'm sure Tripp is happy to see that.

As I am looking out of a window, I assume that my statement about skyscrapers (*locutary*) will be correctly understood as pertaining to these structures (*illocutary*). Tripp's response (*perlocutary*), however, makes it very clear that the intended meaning is incomplete.

Illocution becomes a contested quantity, and since I cannot progress with the conversation unless Tripp can be made to understand, my *intended* meaning is immaterial. The onus is on me and, since I can't correct him, my only recourse is to try and frame my statements

in a manner that Tripp can understand. “In the event that the player acts wildly uncooperatively or crazily”, explain Mateas and Stern (2005), *Façade* first has Grace and Tripp attempt to “retain the integrity of the dramatic arc”; if the player continues to act inappropriately, then “for believability’s sake” the player is forced to leave, accused of “ruining the drama”.

This behavior, they conclude, “is necessary for true player agency – if players are given an interface with the expressive freedom to ruin the experience, they should be free to do so if they wish.” It is this final sentence I find most interesting. Agency can be defined as “the satisfying power to take meaningful action, and see the results of our decisions and choices” (Murray, 1997, p.216) but *Façade* asked me to leave because I enquired after the health of an in-game character. To suggest that I am ruining the experience by not offering the correct set of responses frames this as the fault of the reader – by not anticipating Tripp and Grace’s unpredictable behaviours, I am ruining the experience for myself. Perhaps it is not just the couple that is in an unequal, emotionally abusive relationship.

Forcing users to take responsibility for choices that are incommensurate was criticised in the previous chapter (see Section 5.3.1) and *Façade* seems to take this a step further, asking them to take responsibility for decisions with almost entirely unpredictable outcomes. If a reader is responsible for their actions, but has no control over the framing of that choice, then their responsibility cannot be considered legitimate. If the integrity of the narrative is to be maintained, then the author needs control over the player; too much control, however, and there is no point in creating an interactive narrative at all. In a discussion with Brenda Laurel, Mateas (2004) offered a neat summary of this contradiction. Arguing first that “a player in an interactive drama becomes an author”, he accepts that “these contributions are constrained by the material and formal causes (viewed as affordances) provided by the author of the interactive drama. And hopefully, if these constraints are balanced, the constrained freedom of the player will be productive of agency”. If this argument seems familiar, it may be from the previous chapter’s discussions, particularly the argument that interactive narrative represents a balance between reader choice and authorial power (Ryan, 2006, p.91; Murray, 1997, p.134). I criticized this view for turning the relationship between author and reader into one of invisible coercion, and the same is true here.

Like the opaque hyperlink, *Façade’s* system suffers the same fog between my intended meaning and the outcome. “Meaning” in hypertext fiction is retrospective – it is only on the other end of the hyperlink that the consequence of my action becomes clear. This clarifies for me why

readers of hypertext fiction click almost randomly through the lexia: they understand the action they can take (*locution*) and what hyperlinks are for (*perlocution*) but not the meaning of that particular act (*illocution*). By the time they have identified the intended meaning, the decision has been taken, the author is found. So it is with *Façade,* in which I only know whether I have typed something "right" after verifying it against the NLP system.

Façade sought to fragment narrative in a way that resolved the failings of branching narratives. In seeking to design a framework for freer play within its interactive space, however, *Façade* makes appropriate actions even more opaque, further encouraging the player to be obedient in order to further the narrative. Interactions that yield a response apparently favouring Tripp or Grace will guide the course of the narrative, but Mateas and Stern were clear that they wanted to conceal any indication of what impact your behavior was having. Players instead drive blindly down the motorway, hoping they don't take a wrong turn. The confused sighs of Tripp and Grace cease to be error messages and become something more like warnings: your aberrant behavior will not be tolerated.

Aarseth seems to offer a more explicitly binary version of this argument: players either "surrender to the playwright's ideas of acceptable behaviour" or revolt, acting out a "subversive metanarrative within the game's systems" (1997, p.138). Aarseth's language is troubling, since it suggests that acting against the intentions of the author is a crime against the work. *Façade* foregrounds two related issues: firstly that, like Aarseth, Mateas & Stern see non-authored behaviours as essentially subversive, acts of disobedience rather than rational choices made by players with agency; secondly, that each still believes players are capable of meaningful disruption within the game environment. In practice, while typing *non sequitur* into the dialogue box of *Façade* or comically jumping around a video game antagonist during a dramatic monologue constitutes an act of narrative subversion, this petty digital vandalism does not subvert the system itself, since all behaviors within that system are artificial and authored anyway. Subversive speech in *Façade* is factored in, since anything that cannot be parsed by the language system receives the same reproving sigh from the protagonist.

Describing an ideal system for creating characters in interactive drama, Mateas and Stern (2003) call for "tight authorial control with the real-time capability to dynamically combine multiple behaviors and pursue multiple goals." The subversive player in such a system is like the "kettled" protestor, their every resistance deepening their restraint. Despite this, a properly balanced set of constraints (constraints created entirely by the author at both a system and

textual level) are somehow anticipated to yield a sense of agency in the player. In a paper from 2007, Brian Magerko identified what he called the *boundary problem* (see Section 1.3.3.1) : the more meaningful the choices become, the more harmful these choices are to the coherence of the narrative. *Façade* belongs to the category of work that still sees the relationship between reader and author as antagonistic, and seeks to shape the reader's behavior to ensure that their freedom does not impose on the narrative's coherence.

Taken on its own terms, as a research project that "pushes the formal boundaries of participatory drama" (Murray, 2004), *Façade* feels like a transitional step away from the branching narratives of hypertext fiction, one that still relies on the rhetoric of antiauthorism. Probing *Façade's* dialogue system and encountering multiple dead ends, it becomes clear that this game reproduces many of the limitations that reduced the anti-authorist claims of works addressed in previous chapters. The experiential difference between a word without a hyperlink and a question without a response is ultimately academic, and the reliance on a finite and author-framed set of appropriate responses resulted in a work that simply remediated the quest paradigm.

As the familiar names of *Façade*'s commentators should make clear, it was very much a work produced in the afterglow of hypertext fiction. The following section will look at a more recent work that offers a similarly granular, graphical approach to branching (in turn gravitating towards the quest paradigm): Sam Barlow's 2015 *Her Story.*

6.2.3 Her Story

Independent developer Sam Barlow's *Her Story* takes the form of the Graphical User Interface (GUI) for a mid-1990s Police computer. On it are stored numerous short video clips, ostensibly from a series of police interviews with the chief suspect in a murder case. Users are able to navigate these clips using search terms entered into a form field, consuming them in any order, and keeping track of them by 'tagging' each video with additional personal keywords. A clip in which the interviewee discusses a recent foreign holiday may be pretagged *France* or *Hotel,* and the user may add additional tags as they watch.

Search functions, some critics have argued (Landow, 2006; Miall, 2001), might provide a way around the privileging of the hyperlink found in conventional hypertext fiction. Certainly there are a wider array of choices available: an initial search for the keyword *murder*, for example, yields four clips, three of which mention a victim named Simon; searching for *simon* uncovers 61 new clips, an array of choices which dwarf the seven or eight typically offered

within traditional lexia. The ability to add your own tags to individual clips also permits a level of diegetic control over the content that is not traditionally found in conventional hypertext fiction. These user-authored tags may turn out to be useless, of course, while pre-existing keywords may be red herrings in the vein of Mark Bernstein's "links that lie" (2000), but that is the nature of a murder mystery.

And that is what *Her Story* is: a murder mystery, and one that I would argue works precisely because it is in a genre that privileges the author and sends the reader on a quest for meaning. Users are attempting to develop an overview, a hypotextual understanding of how these clips interrelate, in order to uncover the clip (or clips) that will explain the mystery. Putting aside the material difference between a video clip and a written paragraph, this is a clone of my quest paradigm from the previous chapter.

The same concerns about indeterminacy apply here, too. Significant disagreement exists between those readers and critics who believe the central character is a twin, and those who believe she is suffering from that particular strain of schizophrenia commonly found in blockbuster films. Clips exist that undermine one of these two interpretations, but it would take a full completionist scouring of the system to be certain. "Hypertext presupposes an experiential world in which the goal is always potentially but one jump or link away" (Landow, 2006, p.153) and so too does *Her Story*. The death of the chauffeur in Raymond Chandler's *The Big Sleep* is not resolved within the work, and repeated reading or appeals to the author will not resolve this ambiguity. *Her Story* must be fully explored in order to equally verify that no further secret remains (for which users of video game distribution platform *Steam* receive an achievement, in recognition of their persistence).

The previous chapter noted that an author might structure a hypertext fiction work to hold back key information (Rosello, 1994, p.139; Hales, 2007; Kolb, 1994, p.339) and one argument in favour of the search feature might be that it permits the reader to navigate lexia in an unexpected manner. Much as *afternoon* includes conditional links that only appear if the user has already visited a particular lexia, however, so *Her Story* gates access to certain video clips. The approach taken by *Her Story* is subtle: keywords which will unlock significant video clips are concealed within hard-to-access videos, while the limit of five search results per keyword means more narratively significant videos are buried in the search list.

We find the same gating logic in Stuart Madafiglio's 2013 branching work *no-one has to die*. In this looping interactive fiction, the user toggles parts of a fire suppression system to

rescue different characters from the blaze. This relatively trivial puzzle masks the guiding macrostructure, in which one of the four characters must die during each sequence. Each loop results in one character perishing, before the narrative resets. Only when each character has been saved are we given enough pieces of the puzzle to unlock the gated ending, in which we discover that all characters can be saved, via a *deus ex machine* time travel mechanic. The god in the machine is, of course, the designer, who withheld this mechanic until the last scene, though the title is a proairetic promise that this resolution can be achieved.

In an essay discussing his own hypertext murder mystery, Professor Chris Willerton (2000, p.234) argued "a hyperfiction reader's wish for control is not absolute. It is subordinate to the wish to be interested and entertained", later referencing scholar of mystery fiction Dr. Dennis Porter's assertion that the pleasure of mystery fiction "results to a large degree from the repeated postponement of a desired end." An evolution of the quest paradigm (see Section 5.1.1.3), this approach is found in numerous mystery-oriented successes in interactive fiction, including Fulbright Company's *Gone Home,* Supermassive Games' *Until Dawn,* and the various works by *thechineseroom*, partially run by scholar of interactive fiction Dan Pinchbeck until its closure in 2018. It is the most explicit statement of closure. Just as *Twine* found success asking us to identify with a particular experience or mindset, so these examples of interactive narrative adopt the trappings of mystery fiction to further position the player as pursuant of an author's mental trajectory. This might also account for the emerging popularity of horror-based text games such as Devolver Digital's 2017 *Stories Untold* or Lola's *Ghost Story*, in which convention suggests the author be elusive and opaque, which in turn deepens (rather than undermines) the immersion of the reader (without in this case the dissonance of anticipating answers.)

Continuity with early HTML-based narrative experiments can be seen in works like *Façade, Her Story, Everybody's Gone To The Rapture,* and *80 Days,* or platforms like *Twine* and *inklewriter*. Much as Silver Age Hollywood directors like George Lucas and Stephen Spielberg echoed the fictions of their youth, these largely independent game studios seem to be returning to the same problematic narrative approaches of the 1990s. Discussing Campo Santo's first person adventure game *Firewatch*, for example, designer and writer Sean Vanaman (2016) argues that "everyone who plays the game has a totally different experience" because the events can be encountered in a different order. Attempts by these developers to

create narrative experiences that offer choice through branching paths make the same rhetorical errors regarding control and coercion identified in the previous chapter.

This first section examined works that exemplify the concerns identified in the preceding chapters. The final section will widen the field to consider one way in which simulation can offer a version of choice more compatible with the ambitions of anti-authorism, while still offering a guiding framework to the designer.

6.3 Simulation: Knowing your limitations

Chapter five questioned whether the presence of mechanical choice (the ability to make a selection) was undermined by rules and limitations which restricted the nature of those choices.. Such choices represent another conflation of the *opportunity* and *use* concepts of freedom, to recall Charles Taylor (1985, p.214; see also Section 1.3.2), which downplays the impact of the rules that govern the reader's experience. It is with the nature of these rules that this section is concerned, and how other approaches might afford liberty to the reader.

Video games theorist Jesper Juul (2007, p.1) describes the video game as composed of two distinct spheres: the rules and the fiction. Rules govern what players can and cannot do, while narrative elements are artificial (in the sense of being inaccessible to the player). Juul cites early point-and-click adventure games like Lucas Arts' *The Curse of Monkey Island*, in which the user may be presented with a spectacular tavern scene containing only two interactive elements, and I would suggest "Detective Vision" as a more contemporary example. Detective Vision is found in a diverse range of games, including Klei Entertainment's *Invisible Inc*., Rockstar's *Arkham Knight*, Bethesda Softworks' *Dishonored,* and Suspicious Developments' *Gunpoint).* Detective Vision permits the user to activate a secondary diegetic overlay that highlights interactive elements in bright colours, rendering insignificant elements (both in the literal and colloquial sense) in semi-visible blue. These software rules offer a simulation of reality, permitting the user a specific range of behaviours, and tools like Detective Vision function simply to make this more explicit. It is an acknowledgement of the world's affordances and limitations.

Do simulations offer something substantially more liberating than the simple branching narratives that have so far been my focus, and what object lessons might this very different approach afford? The first action required of a player in *The Curse of Monkey Island* is to call

the cartographer a “failure as a pirate”, to gain a Fake Plastic Hook. To work this out is to understand the intention of the original author, to decipher what actions should be taken; this is no different in practice to the theological choice identified in Chapter 5, in which “in failing to err we can pass” (Holton, 2006, p.6), since players must seek to model the original author’s often quirky mental framework.

What of more complex simulations, however; those that offer a more sophisticated set of tools for the player to use? Chapter Four discussed Nick Luhmann’s principle (2004, p.17) of systems being defined by the boundary between an infinitely complex exterior and a structured, reductive interior. Protagonist Gordon Freeman must place cinder blocks on a seesaw to escape a sewer in Valve Software’s *Half Life 2*, while strips of police tape thwart Rockstar Studio’s muscle-bound Arkham Knight. These rules are reductive, and players are “free only within the boundary of those rules”, to quote Roger Callois (2006, pp.126-27), a definition that comes pleasingly close to that of positive liberty offered by Isaiah Berlin (1969, p.121). Wide critical consensus (Aarseth, 1997, pp.62-65; Bernstein, 2000; Eskelinen, 2001; Landow, 1997, p.117; Moulthrop, 2004, pp.60-61; Murray, 1997, pp.71-72; Wenz, 1999) agrees that users must internalize the rules of a system in order to act within it, which would seem to place simulation in the same author-privileging category seen in previous chapters, thereby opening up its liberation claims to the same criticisms.

This version of internalizing rules is not the same. Where simulation differs from branching narratives is not in granting more power to the reader, but less, and more honestly. Games acknowledge themselves as systems, patterned not by narrative or interactivity but by “simulation” (Aarseth, 2004). Simulation offers a world in which the outcomes of our actions are predictable, even if the consequences are not. The A button is bound to jump; if I press it, my character will jump. Several video game theorists (Crawford, 2012, p.227; Grace, 2014; Mateas & Stern, 2005; Schell, 2008, p.140) have referred to these actions players can undertake as *verbs*: to shoot, to run, to jump etc. Returning to Austin (1975, p.5-7) and his discussion of locution, illocution and perlocution, I would argue that there is no ambiguity between locution and illocution in the above examples, certainly not in the way there is in hypertext fiction. The outcome may be unpredictable but the decision space, a term defined by Klein *et al* as “the range of options at the decision maker’s disposal” (2013), is unambiguous. Concealing the underlying system works *against* the idea of anti-authorism, since it requires the user to predict behaviours rather than take advantage of them. Crucial to this – and what differentiates

simulation's choice from choice as identified in previous chapters – is that these options are transparent.

Consider the simple playground game *Rock, Paper, Scissors*. There are three choices available to both myself and the other player, and while I may win or lose, I cannot claim that the framing of this choice resulted in my loss. That is the nature of the game, and the rules are present and explicit from the start. Scaling this up to a full simulation, the player is aware of the choices they have available to them, and even where these choices are narrow the interpretative space is clear.

Knowledge of the simulation and its affordances, the very transparency so roundly rejected by previous scholars, is precisely the means that permits players to transcend the quest for authorial meaning, and enter an interpretative space that they can truly inhabit. The glee of players discovering that rolling simulated dynamite into a campfire causes an explosion is not testament to aberrant *playership*, as Matteas & Stern or Aarseth would put it, but competent *authorship*. This misunderstanding of liberty is arguably at the heart of the negative reaction to Hello Games' 2016 game *No Man's Sky.* An algorithmically generated universe containing a near-infinite number of procedurally generated planets, the world of *No Man's Sky* was roundly criticised for the similarity of its environments, and reliance on unintuitive systems that required players to accumulate crafting materials. In contrast, Red Hook Studio's 2015 *Darkest Dungeon* represents transparency that brings player choice to the fore.

In *Darkest Dungeon*, the player is given stewardship of a psychologically disturbed group of adventurers, as they delve into successive dungeons. The player has a granular display showing each adventurer's progress and (more importantly) their declining sanity. This offers a stark choice: allow an adventurer to rest or even leave, restoring their mental health but replacing them with a comparatively inexperience newcomer; or persist, retaining a skilled adventurer, but risking their complete collapse. This statistical transparency is what makes this a meaningful choice in the Holton mould (2006, p.4). We know the consequences of forcing our adventurers to continue, and while we may drive them to madness this does not cause the story to "fork" – we have simply made a choice with an unfortunate outcome for the simulated character. In offering the player full knowledge of how the system operates – by keeping the rules entirely transparent, in other words – we gain critical distance from the game's designer.

There is no ambiguity in this system; we are not making a choice to be judged. There is no quest for meaning, since the player can predict the outcome of either choice. Certainly we

are still restricted by the rules of the world, but by making these systems explicit, we are permitted to step away from concern about what content is gated from us by our decisions, and move into the sphere of interpretation. This makes Landow's summary of cybertexts as "rule-governed possibilities" (1994, p.28) less about the restrictions of the rules and more about the potential liberation afforded by being transparent about the affordances of a system. "Those who do not know the rules and are not chosen for initiation must remain in confusion," argues Jo Freeman (2004, p.16), "or suffer from paranoid delusions that something is happening of which they are not quite aware." The context of Freeman's comments – the tyranny of any system that purports to be without structure – resonates with the imbalance generated by an unfair system that consciously evades clarity.

The Vancian magic system employed by many game designers perhaps offers an even purer articulation of this question. Named for fantasy author Jack Vance, this style of "spell-casting" offers a menu of magic spells with explicit effects. This lack of ambiguity permits these spells to be used in a variety of different contexts, permitting emergent play. Any other system requires a mediator to determine the effect, which in the case of video games requires custom graphics and bespoke code that is kept from the player. The illusion of choice comes at the cost of transparency, since the predictability of explicit choices is replaced by the ambiguity of programmer-facilitated alchemy. Lucas Pope's *Papers Please* offers a similar example, in which the player takes the role of a border guard. Determining whether a wife with inadequate visa documentation may enter the country with her husband introduces several considerations – the player character's own family, the infractions already committed – but none of these are mechanical.

In closing, this section will parallel the three-part model for speech offered earlier by Austin with the choice act model derived from Holton's essay, considering how the resultant model applies to both conventional hypertext fiction and the general simulation model described above. Holton's model (2006, p.6) is divided into four parts: *deliberating*, in which you consider the available options; *judging*, in which the available choices are considered; *choosing*, in which the best action is identified; *acting*, in which the intention is acted upon. In a simulation, deliberation pertains to which verb should be selected – the outcome is at least partially knowable, with only the reaction of the simulation withheld. This is a far closer reflection of real-world choice, since the likely outcome is predictable. In conventional hypertext fiction, however, the opaque nature of the links and contingent indeterminacy makes such a choice meaningless,

especially since the destination lexia is already concretised for the author. Hyperlinks offer locution with contested illocution, and the author always wins that contest. In video games, illocution and locution go in tandem. Even where the outcome is unpredictable, the means of reaching that outcome is not. This introduces the closest thing to a genuine conversation with the author, as opposed to the partial conversation of hypertext-inspired systems.

Arguably such subtle changes can sometimes be wrought at the narrative level even in branching works. Inkle Studios' *80 Days* casts the player as Passepartout, butler to the famous Phileas Fogg, as he accompanies his master on a tour of the world. In this game narrative branches exist, but being in service to your master (and the independence of the travel map from the dialog trees) encourage the reader to see themselves not as the motive force behind events, but as guided by them. Speaking of the intentional decision to make their protagonist passive, 80 Days writer Meg Jayanth notes that in her game "NPCs never let [the protagonist] make decisions for them" (2016). This ideologically-motivated decision is part of a wider effort by the writer to have players see the wider context of the work, which Javanth describes as a "massively branching, anti-colonial" work, one encouraging the reader to empathise more with the lives of its non-player characters than Fogg or Passepartout. It may not challenge the dominance of the author, but it at least represents a more honest acknowledgement of the reader's place in the power relationship of author/reader than the works observed elsewhere in this thesis.

Even transmedia storytelling, that "process where integral elements of a fiction get dispersed systematically across multiple delivery channels" (Jenkins 2007), seems to me a logical consequence of the boundary blurring found in hypertext fiction; small wonder since, like so many scholars discussed in this essay, Henry Jenkins spent a sizeable period of his early career studying hypertext. Rather than acknowledge that a work is complete, leaving readers to colonise the interpretative space left by the author, transmedia storytelling contests these spaces. Gaps in the narrative world are no longer the space of the reader alone, but areas yet to be filled. Sanctioning fan fiction as a component in an expanding and authored universe renders these interpretative spaces permanently contested. Lovecraft may have delighted at other authors working within his Cthulu mythos (Lockhart, xi, 2011), but this approval was restricted (at the time) to authors writing within this world. J.K. Rowling has maintained an ambiguous relationship with such works, though the fan fiction community responded poorly to *FanFiction.net*'s legally enforced deletion of the adult Harry Potter fan fiction archive. In

practice, the tools of creation and distribution are also weighted in favour of the author, who may retrospectively colonise what was previously the domain of the reader. The modern vogue for returning to perfect, elusive cinematic works and "filling out the world" (thereby shrinking the extent of it that is in the hands of the reader) is symptomatic of this thinking. Do we need to know where the aliens of *Alien* came from, or what Hannibal Lecter did next? These worlds are meaningful to us often because they resist closure or completion.

6.4 Conclusion

This chapter sought to foreground works that echo the concerns of this thesis, in doing so highlighting the continuities between first generation interactive fiction works, and those produced today.

The first section explored other approaches to hypertext, suggesting that in these we find potential solutions to the limits of conventional hypertext fiction. This was followed by an exploration of *Twine,* arguing that in privileging the individual author's biography, it showed conventional hypertext fiction's particular utility for such work. The second section pivoted on Mateas and Stern's *Façade,* demonstrating that its use of a pseudo-error message and resistance to "subversive" activity on the part of the reader demonstrated an unwillingness to move beyond the paradigm found in earlier works of hypertext fiction. The third section examined the mystery genre and its success within branching interactive narratives, suggesting the success of this genre further underlined literary hypertext fiction's privileging of the author. The final section foregrounded one way in which simulation's transparent approach to affordance permitted readers to take control of the narrative in ways that conventional hypertext fiction did not.

As the field continues to develop, we are likely to see video games that remediate the paradigms identified in this thesis, continuing to devise new strategies (critical paths, area gating and so on) that favour the search for an author's meaning, just as emergence offers new means by which players might craft their own narratives. In 2015, for example, both Dontnod Entertainment's *Life is Strange* and inklestudios' adaptation of *Sorcery!* built in a mechanic that allowed the player to rewind the story at will, permitting them to experience specific moments as many times as required for meaning to be conveyed; 2017's *Tacoma* by the Fullbright Company reproduces lexia as vignettes, performed as the player navigates a vast space station, tracing the narrative threads of its crew in pursuit of meaning. At the same time, works like *>spectator_*

offer a visible dialog tree, which bypasses the choice entirely by making consequences explicit, while Daedlic Entertainment's adaptation of Ken Follet's *The Pillars of the Earth* offers no deviations from the source material, but numerous transparent choices whose consequences are explained to the player.

Chapter 7 Conclusion

This thesis was about gaps: between readers and authors; between lexia; between Barthes' intention of undermining critical judgment, and the reality of authorial control found in hypertext; between theoretical frameworks and practical applications; between an enthusiastic *then* and a pragmatic *now*. Chapter 1 outlined keys terms like *freedom*, *liberty*, *choice*: terms which subsequent chapters demonstrated as having very different definitions in the fields of hypertext and Continental literary theory. These differing approaches to assumed cognates were pursued through Isaiah Berlin's *Two Concepts of Liberty*.

"Hypertext did not result in the revolution in authoring practices, the decentering of authority, or the empowerment of the reader that had been projected" argues Kathleen Fitzpatrick (2014, p.63). Barthes' argument, which called for a revised *approach* to criticism rather than a new medium, was misrepresented as materialist by first wave criticism, rather than as the chastisement of intrusive critics and authors originally intended; hypertext's positivist model of information management was similarly distorted to imply a narrow philosophical mission that did not fit its design. Readership surveys and alternative models helped to undermine this dominant mode of first wave criticism, but this thesis has argued that the incompatibilities between Continental literary and hypertext theory deserved (but did not receive) equal scrutiny.

What is the future for hypertext fiction? For some critics - detractors and fans alike - hypertext fiction belongs to the avant-garde and their academic associates, as far from mainstream discourse as possible: an obscurantist, backwater medium suited only to poststructuralist experimentation. In this scenario our only options are, to quote Diane Greco, "anxious identification or phobic dissociation" (2009, p.15).

There are others, however, who feel that hypertext fiction might be rehabilitated. After all, hypertext is an ideal medium for motivated exploration, whether as a search for authorial meaning or for immersion in another point of view – not to mention one with a relatively low barrier to entry (see Section 6.2.1). Perhaps we could indeed rehabilitate even conventional hypertext fiction for "mainstream consciousness" (Pope, 2013, p.207), seeing it as moving forward by looking back. Hypertext fiction may yet offer that most traditional of storytelling experiences: a search for the author.

Seeing hypertext fiction in this light, however, still misses the point of Barthes' original criticism. Second wave critics were preoccupied with precisely what antiauthorism rejected: a literary canon (in the form of *StorySpace*); standardised methodologies for analysis; critical consensus; the valorisation of authorial meaning; the authoring of critical histories and biographies of key voices. This approach persists in the current minor swell of critical interest.

This confusing situation arises from a misunderstanding of hypertext fiction's twin shibboleths: *empowerment* and *engagement*. Engagement asks readers to immerse themselves in a narrative world, but empowerment requires that they take control of the narrative. This concern has exercised critics since the early days of hypertext fiction theory (see Section 5.3) and persists to the present day (see Section 6.3).

The apparent incompatibility between empowerment and engagement, however, stems from a fundamental misunderstanding of how empowerment actually works. Empowerment comes from informed, meaningful choice (see Section 5.3), but the kinds of choices historically favoured by hypertext fiction have undermined this empowerment. Alice Bell rightly argues that readers have been "erroneously attributed with unrealistic powers in their actual capacity to manipulate and operate within the text" (2010, p.12), while Sabrina Mazzali-Lurati argued that hypertext "strengthens [the author's] role as designer of paths of meaning" (2007, p.166). These issues only arise from the ironically opaque forms of choice offered by many creators of conventional hypertext fiction, however, on whose works these critics based their criticism.

A hypertext fiction that evokes interpretative gaps within the narrative is one that acknowledges both the function and limits of its own peculiar form of connectivity. The self-defeating reflexive playfulness of hyperlinks that don't lead anywhere or connect randomly represent short-lived diversions from the genuine challenge of creating works that privilege the reader's powers of interpretation. Isolated from the networked expectation of modern hypertext systems, a conventional hypertext that guaranteed itself as finite might actually be *better* at evidencing anti-authorist principles. Hypertext works connected to the wider internet imply a connection to universality, to objectivity, that a conventional work does not. If authors can be persuaded to favour blatant hyperlinking and a clear hypostructure, then readers will ironically be granted the empowerment that opaque structures could not offer.

Such a hypertext – a hypertext of negative liberty, favouring the reader's interpretation – would clearly demarcate the playful space of the reader. On the one hand we might have a work with no links, no logic, no hypotext *at all*. Clearly the lexia themselves would still be authored,

but while (for example) slipping randomised notes into the work would undermine the author even further, we are then bringing material from the outside world into the diegesis of the work, rather than clearly defining its boundaries. Also, as Marie-Laure Ryan wryly notes, if we strip away *all* characteristics that define authorship we will have to come up with a new word for writing (see p.198). Another approach might offer the exact opposite: a work that begins at the hypotextual level, zoomed out and open; all links are clearly, banally obvious, the logic which connects the lexia explicit. This, again, clearly demarcates the spaces over which the author has control.

Each of the examples above gives the reader mastery over the work, since they know its boundaries: no gated lexia or hidden hypostructure here; no Freeland-esque hidden structures of power (see Section 4.3.2). In each case the reader has clarity about the extent of the work and what rules underpin it. Conventional literary hypertext fiction sits at the uneasy midpoint, its structure present but opaque. This compromise, this attempt to favour modernist sensibilities with a restrictive epistemological structuring technology, undermines attempts to create a hypertext that genuinely favours the reader and undermines the author.

Barthes *et al.* were primarily concerned with checking the tendency to defer to authors and critics in understanding a work, encouraging the reader to proffer their interpretations without anxiety. The works he and critics like him praised were those which, upon conclusion, refused to offer closure, and for which critics could not offer an appropriate salve. Like Sontag (see Section 3.1), we might also call for an erotics of hypertextual interpretation, one that ignores navigational concerns, and focuses on the sensual experience of the narrative. The boundaries and limitations of the work would lie before the reader, complete in itself, encouraging an engagement that is sensual and personal, rather than being contingent on the search for meaning. An erotics of hypertext might involve acknowledging and celebrating confusion, rather than seeing it as something to be critically evaluated or undermined. Rather than distancing ourselves from it, we would experience its confusion confidently. The directness of interaction should be able to liberate us from the historical restrictions of hypertext as a medium. Ironically, conventional hypertext fiction might just as easily have been used to finally skewer the representation of reading as a fundamentally oppositional act, and underscore the collaborative work undertaken by an alliance of reader and author.

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